

AD-A044 150

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ENVIRONMENTAL POLLUTION: AIR POLLUTION - PARTICULATE MATTERS.(U)  
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**ENVIRONMENTAL POLLUTION:  
AIR POLLUTION - PARTICULATE MATTERS**

**A DDC BIBLIOGRAPHY**

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**AUGUST 1977**

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This bibliography contains citations of reports dealing with air pollution - particulate matters; analysis of atmospheric aerosols, and particulate matters; specifically particle size, measurement, distribution and identification of pollutants; atmospheric motion of aerosol particles such as scattering, settling, diffusion, and transport properties, and other topics such as dust and pollens. Corporate Author-Monitoring Agency, Subject, Title and Personal Author Indexes are provided.		

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*Item 19 KEY WORDS (Cont'd)*

Volcanoes  
Monitors  
Combustion Products  
Atmospheric Motion  
Atmospheric Condensation  
Aircraft Engines  
Tobacco  
Contamination

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## FOREWORD

This bibliography contains 278 unclassified and unlimited citations of reports on *Environmental Pollution: Air Pollution-Particulate Matters*. References were taken from entries processed into the Defense Documentation Center's AD data bank during the period October 1953 to April 1977.

This bibliography supersedes DDC report bibliographies on *Environmental Pollution: Air Pollution - Particulate Matters*, AD-723 900, DDC-TAS-70-90-1, dated May 1971 and AD-769 960, DDC-TAS-73-71, dated November 1973.

Individual entries are arranged in AD number sequence under the heading AD Bibliographic References. Computer-generated indexes of Corporate Author-Monitoring Agency, Subject, Title, and Personal Author are provided.

BY ORDER OF THE DIRECTOR, DEFENSE LOGISTICS AGENCY

OFFICIAL

*Hubert E. Sauter*

HUBERT E. SAUTER  
Administrator  
Defense Documentation Center

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 270 442

CALIFORNIA UNIV LOS ANGELES

AIR POLLUTION STUDIES WITH SIMULATED ATMOSPHERES (U)

JUL 61 1V BUCHBERG, H.; JONES, M. H.;  
REPT. NO. 61 44

UNCLASSIFIED REPORT

DESCRIPTORS: \*AIR, \*ATMOSPHERES, \*CONTAMINATION, \*EYE,  
\*SIMULATION, COMPUTERS, EXHAUST GASES, HAZARDS,  
MATHEMATICAL ANALYSIS, MEASUREMENT, PARTICLES,  
RADIOMETERS, SMOKE, STIMULATION(PHYSIOLOGY) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 294 879

TECHNICAL LIBRARY CAMP DETRICK FREDERICK MD

BIBLIOGRAPHY ON METHODS OF SAMPLING AIRBORNE  
PARTICLES

(U)

AUG 53 1V

UNCLASSIFIED REPORT

DESCRIPTORS: \*AIR, \*BIBLIOGRAPHIES, ATMOSPHERES,  
CONTAMINATION, PARTICLES, SAMPLING, VOLCANIC DUST  
IDENTIFIERS: VOLCANIC DUST

(U)

(M)

THIS BIBLIOGRAPHY CONTAINS JOURNAL REFERENCES  
COVERING THE YEARS FROM ABOUT 1930 TO JUNE, 1953,  
AND A FEW EARLIER REFERENCES. MAIN SOURCES OF THE  
REFERENCES WERE BULLE IN OF HYGIENE, CHEMICAL  
ABSTRACTS, INDUSTRIAL ARTS INDEX, AND THE  
BIBLIOGRAPHIES IN MANY OF THE ARTICLES THEMSELVES.  
THE SUBJECT MATTER COVERS ONLY METHODS OF SAMPLING  
AIRBORNE PARTICLES; NO ATTEMPT WAS MADE TO INCLUDE  
SUBJECTS SUCH AS AIR CLEANING OR PARTICLE SIZE  
ANALYSIS. REFERENCE IS MADE TO ABSTRACTS IN  
CHEMICAL ABSTRACTS AND THE BULLETIN OF  
HYGIFNE IN MANY CASES WHERE THE ORIGINAL PAPER IS  
NOT IN THE CAMP DETRICK TECHNICAL LIBRARY.  
THE REFERENCES ARE DIVIDED INTO TEN SUBJECT  
GROUPINGS AND ONE TITLE IS REPEATED UNDER AS MANY  
GROUPS AS SEEMED APPROPRIATE. SINCE MANY OF THE  
TITLES ARE NOT IN THE CAMP DETRICK TECHNICAL  
LIBRARY, CLASSIFICATION OF THOSE TITLES UNDER THE  
SUBJECT GROUPS WAS BASED ONLY ON THE TITLE OF THE  
PAPER; IN SOME CASES WHERE NO CLUE AT ALL WAS  
AVAILABLE AS TO THE TYPE OF SAMPLER DISCUSSED IN THE  
PAPER, IT WAS PLACED AT THE END IN THE MISCELLANEOUS  
GROUP. IT IS NOT CLAIMED THAT THIS IS A COMPLETE  
BIBLIOGRAPHY FOR THE YEARS COVERED, BUT IT IS HOPED  
THAT NO SERIOUS OMMISSIONS HAVE OCCURRED.  
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 294 880

TECHNICAL LIBRARY CAMP DETRICK FREDERICK MD

BIBLIOGRAPHY ON METHODS OF SAMPLING AIRBORNE  
PARTICLES (SUPPLEMENT)

(U)

NOV 56 1V

UNCLASSIFIED REPORT

DESCRIPTORS: \*AIR, \*ATMOSPHERES, \*BIBLIOGRAPHIES,  
AEROSOLS, CONTAMINATION, PARTICLES, SAMPLING, TEST  
METHODS

(U)

AD-294 8800N2 +++BIBLIOGRAPHY LISTING TITLES  
AND SOURCES OF REPORTS ON METHODS OF SAMPLING  
AIRBORNE PARTICLES; 1950 TO 1956.

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 297 328

GENERAL DYNAMICS/POMONA CALIF

ANALYSIS OF ATMOSPHERIC DUST

(U)

JUN 59 1V MCGOWAN, M.A. IKPUSE, G.N. IKELLER, E.E. ;  
REPT. NO. 8926 110  
CONTRACT: AF33 657 8926

UNCLASSIFIED REPORT

DESCRIPTORS: \*PARTICLE SIZE, ANALYSIS, ATMOSPHERES, AIR  
POLLUTION, DUST STORMS, HUMIDITY, PARTICLES,  
TEMPERATURE (U)

AN ANALYSIS OF ATMOSPHERIC DUST THROUGH A STUDY OF PARTICLES  
PER UNIT VOLUME OF AIR.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 400 361

LOCKHEED MISSILES AND SPACE CO SUNNYVALE CALIF

DUST CONTROL TECHNIQUES FOR CLEAN ROOMS

(U)

MAR 61 1V EVANS, GEORGE R.  
REPT. NO. SB 61 9

UNCLASSIFIED REPORT

DESCRIPTORS: \*AIR, \*BIBLIOGRAPHIES, \*PARTICLES,  
AEROSOLS, CONTAMINATION, CONTROL, DUST STORMS,  
INSTRUMENTATION, MAINTENANCE, SAFETY, SAMPLING

(U)

BIBLIOGRAPHY ON DUST CONTROL TECHNIQUES FOR CLEAN ROOMS.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 401 647

NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

A DISPERSER FOR DEPOSITING SIMULATED DRY FALLOUT  
MATERIAL ON LARGE ROOF SURFACES

(U)

DEC 62 1V KEHRER, W.S.;  
REPT. NO. TR609

UNCLASSIFIED REPORT

DESCRIPTORS: \*AEROSOLS, \*AIR POLLUTION, DESIGN,  
HANDLING, SIMULATION, SPRAY NOZZLES  
IDENTIFIERS: DISPERSION

(U)

(M)

A DISPERSER FOR DEPOSITING SIMULATED DRY FALLOUT MATERIAL  
ON LARGE ROOF SURFACES: DESIGN AND CONSTRUCTION.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 403 103

HARVARD COLL CAMBRIDGE MASS MUSEUM OF COMPARATIVE  
ZOOLOGY

THE BRIGHTNESS OF THE SKY IN THE VICINITY OF THE  
SUN,

(U)

MAR 63 8P MENZEL, D.H.; SEN, H.K.;  
REPT. NO. SP19  
CONTRACT: AF19 604 4962  
PROJ: 7649  
TASK: 76490  
MONITOR: AFCRL 63 240

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPRINT FROM PROCEEDINGS OF THE  
SYMPOSIUM ON SOLAR SEEING, 20-25 FEB 1961.  
(COPIES ALSO AVAILABLE FROM DDC)

DESCRIPTORS: \*AIR POLLUTION, \*SKY, \*PARTICLE SIZE, HAZE,  
WASTE GASES, SMOKE, WASTES (INDUSTRIAL), COAL, MATHE (U)

A STUDY MADE OF THE SCATTERING OF SMALL PARTICLES  
IN THE EARTH'S ATMOSPHERE SET A STANDARD FOR STUDIES  
OF ATMOSPHERIC POLLUTION BY DUST, SMOKE, OR OTHER  
PARTICLES. THE STUDY TAKES INTO AC COUNT THE  
DIFFUSION OF PARTICLES FROM A SOURCE OF POLLUTION,  
SUCH AS AN INDUSTRIAL CHIMNEY, AND SETS LIMITS FOR  
THE POLLUTION IN TERMS OF SKY BRIGHTNESS IMMEDIATELY  
SURROUNDING THE SUN. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 403 509

AIR WEATHER SERVICE SCOTT AFB ILL

FORECASTING BLOWING DUST AT GEORGE AFB, CALIFORNIA,

(U)

MAR 63

8P

BICKETT, KENNETH W.;

UNCLASSIFIED REPORT

DESCRIPTORS: \*WEATHER FORECASTING, \*DUST, \*VISIBILITY,  
\*WIND, VELOCITY.

(U)

THE MAIN FACTORS IN CAUSING BLOWING T AT GEORGE AFB ARE THE COMBINATION OF STEADY WIND SPEED AND GUSTS, WITH STEADY WIND SPEED AS THE MAIN FACTOR. WHEN THE STEADY WIND SPEED REACHES ITS CRITICAL VALUE THE LOOSE DUST LYING ON THE DESERT FLOOR WILL BE LIFTED TO A HEIGHT SUFFICIENT TO RESTRICT THE VISIBILITY. THESE VALUES ARE, 17 KNOTS FOR A NORTHERLY WIND, 26 KNOTS FOR A SOUTHERLY WIND, AND 25 KNOTS FOR A WESTERLY WIND. THE CRITICAL VALUE INCREASES TO 30 KNOTS DURING THE MONTHS APRIL THROUGH SEPTEMBER FOR A SOUTHERLY WIND, AND FROM JUNE THROUGH SEPTEMBER FOR A WESTERLY WIND. THIS IS A RESULT OF THE "BAKING ACTION" OF THE DESERT FLOOR BY THE SUN AND THE INCREASE IN DESERT FOLIAGE. GUSTS ALONE WITHOUT A SUFFICIENTLY STRONG STEADY WIND, WILL ONLY LIFT THE DUST A FEW FEET ABOVE THE GROUND, IT WILL THEN SETTLE ON THE LEE SIDE OF THE BRUSH. AFTER THE DUST HAS BEEN LIFTED BY THE STEADY WIND THE GUSTS LIFT LARGER QUANTITIES OF DUST INTO THE ATMOSPHERE AND FORCE IT TO GREATER HEIGHTS. THE PRINCIPAL SOURCE REGIONS FOR BLOWING DUST ARE: THE AREA IN THE VICINITY OF THE MOUTH OF CAJON PASS (TO THE SOUTH), THE DRY LAKE BEDS AND MESA BETWEEN GEORGE AFB AND PALMDALE (TO THE WEST), AND THE MOJAVE RIVER VALLEY (TO THE NORTH). THE MAIN DIFFICULTY IN FORECASTING BLOWING DUST AT GEORGE AFB IS WHETHER THE MAIN BODY OF DUST WILL BE CARRIED THROUGH GEORGE AFB OR ON THE OUTER PERIMETERS. WITH A SOUTH WIND, THE AIR IS FUNNELLED THROUGH CAJON PASS AND FANNED OUT OVER THE DESERT, WHILE THE CENTER OF THE STREAM MOVES NORTHWARD THROUGH APPLE VALLEY. THE PREDOMINATE DUST LAYER TRAVELS WITH THE MAIN STREAM, WITH GEORGE AFB LYING ON THE OUTER FRINGES. BLOWING DUST IS NOT A PROBLEM DURING THE SUMMER MONTHS WITH A SOUTH WIND, EXCEPT WHEN ASSOCIATED WITH THUNDERSTORMS. (AUTHOR)

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 403 977

JOINT PUBLICATIONS RESEARCH SERVICE WASHINGTON D C

ATMOSPHERIC POLLUTION,

(U)

MAR 63 267P

JUDA, BY JAN BRUDZINSKI,

KAROL ;

REPT. NO. 18455

UNCLASSIFIED REPORT

NOTICE: ALSO FROM OTS FOR \$4.00 AS REPT. 63  
21460.

SUPPLEMENTARY NOTE: TRANS. OF MONO. ZANIECZYSZCZENIA  
ATMOSFERY, WARSAW, 1961, 256P.

DESCRIPTORS: \*AIR POLLUTION, DAMAGE, SOURCES, WASTES  
(INDUSTRIAL), SCATTERING, \*POLAND, METEOROLOGICAL  
PHENOMENA, TABLES(DATA), TEST METHODS, SANITARY  
ENGINEERING, AEROSOLS.

(U)

CONTENTS: SYSTEMATIC CLASSIFICATION OF  
ATMOSPHERIC POLLUTANTS SOURCES OF ATMOSPHERIC  
POLLUTANTS DAMAGE CAUSED BY ATMOSPHERIC POLLUTION  
AEROSOL MECHANICS THE INFLUENCE OF METEOROLOGICAL  
CONDITIONS ON THE DISPERSION OF POLLUTANTS  
DISPERSION OF POLLUTANTS IN THE ATMOSPHERE  
METHODS OF MEASURING ATMOSPHERIC POLLUTION  
DETERMINATION OF POLLUTANT EMISSION ESTIMATION OF  
DUSTFALL DETERMINATION OF PARTICULATE MATTER  
CONCENTRATION IN AIR DETERMINATION OF GASEOUS AIR  
POLLUTANTS

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 429 239

STANFORD RESEARCH INST MENLO PARK CALIF

INSTRUMENTS FOR MEASUREMENT OF DUSTY AIRBLAST EFFECTS  
IN HIGH OVERPRESSURE REGIONS. (U)

DESCRIPTIVE NOTE: FINAL REPT.,

SEP 63 55P WITHERLY, T. D. ;

CONTRACT: DA49 146XZ024

PROJ: PHU3108

MONITOR: DASA 1433

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPORT ON PHASE 5.

DESCRIPTORS: (\*INSTRUMENTATION, DUST STORMS), DESIGN,  
PRESSURE GAGES, MODELS (SIMULATIONS), DRAG, SHEAR  
STRESSES, PARTICLE SIZE, THEORY, CALIBRATION,  
SENSITIVITY, STRAIN GAGES, ANALOG COMPUTERS, TRACKS  
(AERODYNAMICS), MEASUREMENT (U)

INSTRUMENTATION HAS BEEN DEVELOPED FOR THE  
MEASUREMENT OF DYNAMIC PRESSURES AND DRAG FORCES IN  
HIGH VELOCITY, HIGH PRESSURE AIRSTREAMS WHICH ARE  
LADEN WITH DUST. THE INSTRUMENTS ARE INTENDED  
SPECIFICALLY FOR THE HIGH OVERPRESSURE REGIONS (UP  
TO 500 PSI) DURING ATMOSPHERIC TESTS OF NUCLEAR  
WEAPONS OVER DESERT SURFACES. THE RESEARCH PROGRAM  
INCLUDED THE DESIGN AND CONSTRUCTION OF: (1) FOUR  
TOTAL PRESSURE PROBES (SRI-MAD GAGES) CAPABLE OF  
MEASURING ALMOST INDEPENDENTLY THE TOTAL PRESSURE OF  
THE GAS PHASE AND THE MOMENTUM FLUX OF THE SUSPENDED  
DUST, (2) FOUR TOTAL DRAG PROBES TO MEASURE  
DIRECTLY THE DRAG FORCE ON A CYLINDER, (3) FOUR  
DUST SAMPLING DEVICES TO OBTAIN REPRESENTATIVE  
SAMPLES OF SUSPENDED DUST FOR PARTICLE SIZE  
DISTRIBUTION ANALYSES AND (4) A SURFACE SHEAR  
GAGE TO MEASURE THE MAGNITUDE OF AIRBLAST INDUCED  
SHEAR STRESSES IN THE SOIL. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 455 083

ARMY ELECTRONICS RESEARCH AND DEVELOPMENT ACTIVITY WHITE  
SANDS MISSILE RANGE N MEX

K. G. SCHMIDT AND G. HEIDERMANN ON PHASE CONTRAST  
DUST MICROSCOPY - 1956-1962 TRANSLATIONS OF FIVE  
SELECTED ARTICLES, (U)

JAN 65 64P HOIDALE, GLENN B. ;  
TASK: 1P620901A199 05

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (\*DUST, MICROSCOPY), (\*PARTICLES,  
MICROSCOPY), (\*POWDERS, MICROSCOPY), MINERALS,  
REFRACTIVE INDEX, COLOR, PARTICLE SIZE, SCATTERING,  
FLUIDS, ORGANIC SOLVENTS, OPTICAL FILTERS, MEMBRANES,  
ATMOSPHERES, CHEMICAL ANALYSIS (U)

THIS DOCUMENT PRESENTS TRANSLATION INTO ENGLISH  
OF FIVE ARTICLES BY K. G. SCHMIDT AND G.  
HEIDERMANN ON THE APPLICATION OF PHASE CONTRAST AND  
DARK FIELD MICROSCOPY TO THE COLOR IDENTIFICATION OF  
MICRON SIZED ATMOSPHERIC MINERAL PARTICULATES. THE  
DISPERSION STAINING ARTICLES APPEARED IN THE GERMAN  
PERIODICAL, STAUB, BETWEEN 1956 AND 1962.  
(AUTHOR) (U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 471 882

DAVID TAYLOR MODEL BASIN WASHINGTON D C

A REVIEW OF AIR-FLOW VISUALIZATION BY MEANS OF MIST,  
SMOKE, AND DUST, (U)

OCT 55 32P LEE, JAMES M.  
REPT. NO. DTMB-AERO-883

UNCLASSIFIED REPORT

DESCRIPTORS: (\*FLOW VISUALIZATION, WIND TUNNELS), (\*WIND  
TUNNELS, FLOW VISUALIZATION), REVIEWS, FOG, SMOKE, DUST,  
AIR, SMOKE GENERATORS, KEROSENE, TITANIUM COMPOUNDS,  
CHLORIDES, VIBRATION, NOISE, INJECTION, TEST METHODS (U)

A RESUME IS GIVEN ON THE USE OF MIST, DUST, AND  
SMOKE FOR AERODYNAMIC STUDIES. TYPICAL TESTS HAVE  
BEEN CITED FOR THE VARIOUS TYPES OF FLOW-  
VISUALIZATION MEDIUMS STUDIED. A COMPREHENSIVE  
BIBLIOGRAPHY IS INCLUDED. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 600 292

NAVAL RESEARCH LAB WASHINGTON D C

CHARACTERISTICS OF AIR FILTER MEDIA USED FOR  
MONITORING AIRBORNE RADIOACTIVITY,

(U)

MAR 64 19P LOCKHART, L. B. JR.; PATTERSON,  
R. L. JR.; ANDERSON, W. L. ;  
REPT. NO. NPL-6054

UNCLASSIFIED REPORT

DESCRIPTORS: (\*RADIATION MONITORS, DESIGN), (\*GAS  
FILTERS, AIR), (\*AIR POLLUTION, MONITORS),  
(\*RADIOACTIVITY, AIRBORNE), AEROSOLS, FISSION PRODUCTS,  
NATURAL RADIOACTIVITY, PHTHALATES, CELLULOSE, ASBESTOS,  
TENSILE PROPERTIES, THICKNESS, DENSITY, ABSORPTION (U)

A COMPARISON WAS MADE OF THE MORE IMPORTANT  
CHARACTERISTICS OF THE AVAILABLE FILTER MATERIALS  
WHICH ARE CURRENTLY IN USE BY VARIOUS SYSTEMS FOR  
MONITORING AIRBORNE RADIOACTIVITY THROUGHOUT THE  
WORLD. MOST OF THE MATERIALS DESCRIBED ARE  
COMMERCIALY AVAILABLE; THE INFORMATION HEREIN IS  
PRESENTED WITH THE HOPE THAT IT WILL BE OF USE TO  
THOSE WHOSE PROGRAMS INVOLVE THE EMPLOYMENT OF AIR-  
FILTER MEDIA OR WHO REQUIRE SUCH INFORMATION FOR THE  
DESIGN OF AIR-FILTER SYSTEMS. THE FILTER  
CHARACTERISTICS MEASURED ARE SUCH PHYSICAL PROPERTIES  
AS TENSILE STRENGTH, THICKNESS, DENSITY, ASH CONTENT,  
RETENTIVITY TOWARD 0.3 MICRON DIOCTYL PHTHALATE  
(DOP) AEROSOL PARTICLES AS A FUNCTION OF AIR  
VELOCITY, RETENTIVITY TOWARD AIRBORNE FISSION  
PRODUCTS AND NATURAL RADIOACTIVE AEROSOLS (RADON  
DAUGHTERS) AT SEVERAL AIR VELOCITIES, FLOW RATE AS  
A FUNCTION OF PRESSURE DROP ACROSS THE FILTER, AND  
THE RELATIVE RATES OF CLOGGING BY ATMOSPHERIC DUST.  
THE OBSERVATION OF A RAPID CHANGE IN FLOW WITH DUST  
LOADING OF SOME OF THE FILTER MEDIA SUGGESTS THE  
SYSTEMATIC STUDY OF SUCH CHANGES AS POSSIBLY A SIMPLE  
PROCEDURE FOR MONITORING THE DUST CONTENT OF THE  
ATMOSPHERE. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 600 598

MINNESOTA UNIV MINNEAPOLIS SCHOOL OF PHYSICS AND  
ASTRONOMY

ATMOSPHERIC PHYSICS RESEARCH.

(U)

DESCRIPTIVE NOTE: ANNUAL PROGRESS REPT.

APR 64 92P

CONTRACT: NONR710 22

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (\*ATMOSPHERES, SCIENTIFIC RESEARCH), DUST,  
AEROSOLS, IONS, DISTRIBUTION, MEASUREMENT,  
INSTRUMENTATION, PHYSICS

(U)

MEASUREMENTS OF THE VERTICAL DISTRIBUTION OF DUST  
IN THE ATMOSPHERE SUGGEST THE PRESENCE OF PARTICULATE  
MATTER IN SUFFICIENT QUANTITIES TO AFFECT THE ION  
CONCENTRATION. A PROJECT WAS INITIATED IN  
SEPTEMBER 1962 TO MEASURE THE TOTAL AMBIENT AEROSOL  
CONCENTRATION IN THE STRATOSPHERE AND THE ASSOCIATED  
SIZE DISTRIBUTION. THE VARIATIONS OF ATMOSPHERIC  
OZONE WITH ALTITUDE, THE SEASONS, OVER A PERIOD OF  
DAYS AND EVEN OVER A PERIOD OF SEVERAL HOURS WAS  
STUDIED. THE DATA INCLUDED IN THIS REPORT WAS  
COLLECTED FROM AUGUST 1962 TO SEPTEMBER 1963.  
ON MANY OF THE FLIGHTS BOTH ASCENT AND DESCENT  
MEASUREMENTS WERE OBTAINED, THUS PERMITTING THE STUDY  
OF OZONE VARIATION WHICH MAY OCCUR WITHIN THE PERIOD  
OF SEVERAL HOURS.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 601 029

FRANKFORD ARSENAL PHILADELPHIA PA

INVESTIGATION AND ANALYSIS OF STANDARDS FOR USE IN  
THE SAND AND DUST TESTING OF MILITARY EQUIPMENT. (U)

DEC 63 49P SIGISMUND, MARK ;  
REPT. NO. FA-M64-18-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (\*AIR FORCE EQUIPMENT, DESERT TESTS),  
(\*GROUND SUPPORT EQUIPMENT, ENVIRONMENTAL TESTS),  
(\*SAND, AIRBORNE), \*DUST, WIND, VELOCITY, PARTICLE SIZE,  
DENSITY, TEMPERATURE, STANDARDS, SPECIFICATIONS,  
PENETRATION, MILITARY REQUIREMENTS, TEST METHODS (U)

AN INVESTIGATIVE STUDY WAS MADE OF THE STATE-OF-  
THE-ART OF SAND AND DUST ENVIRONMENTAL TESTING.  
FIELD AND LABORATORY STUDIES WERE CONDUCTED IN  
ORDER TO OBTAIN SUFFICIENT REALISTIC DATA CONCERNING  
THE SAND AND DUST ENVIRONMENTS FOR USE AS GUIDANCE IN  
PREPARATION OF MILITARY STANDARDS FOR SAND AND  
DUST ENVIRONMENTAL TESTING WHICH SIMULATES THE  
DEGRADATION AND/OR DAMAGE DONE BY BLOWING SAND OR  
SAND AND DUST IN A DESERT ENVIRONMENT. DUE TO THE  
LACK OF SUFFICIENTLY SEVERE WIND STORMS IN THE TEST  
AREAS CHOSEN, INFORMATION COLLECTED OVER A TWO YEAR  
PERIOD FAILED TO PROVIDE ALL OF THE FIELD DATA  
REQUIRED. THE LABORATORY DATA OBTAINED USING  
EXISTING SAND AND DUST TEST CHAMBERS WERE NOT  
ABLE TO SUPPLY ALL OF THE ANSWERS NEEDED. A NEW  
TYPE OF TEST CHAMBER HAS BEEN DESIGNED FOR THIS  
PURPOSE, WHICH WHEN INSTALLED, WILL BE USED FOR  
CONTINUATION OF THE EXPERIMENTAL INVESTIGATIONS.  
THIS REPORT RECOMMENDS THAT TWO TEST PROCEDURES BE  
ESTABLISHED; ONE FOR DUST (FINE SAND)  
COVERING THE 10 TO 150 MICRON SIZE RANGE, AND THE  
OTHER FOR SAND COVERING THE 150 TO 800 MICRON SIZE  
RANGE. SOME RECOMMENDATIONS FOR INCLUSION IN THE  
DUST (FINE SAND) MIL-STD ARE PRESENTED IN  
THIS REPORT. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 601 707

ARMY ELECTRONICS RESEARCH AND DEVELOPMENT ACTIVITY WHITE  
SANDS MISSILE RANGE N MEX

A PROPOSED X-RAY-INFRARED METHOD FOR IDENTIFICATION  
OF ATMOSPHERIC MINERAL DUST. (U)

JUN 64 20P BARBER, TEDDY L. ;  
REPT. NO. AFRDA-141

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (\*DUST, ATMOSPHERES), (\*X RAY DIFFRACTION,  
DUST), (\*INFRARED SPECTROSCOPY, DUST), IDENTIFICATION,  
MINERALS, PARTICLES, COLLECTING METHODS, COPPER,  
CHROMIUM, ABSORPTION SPECTRA, CRYSTALLOGRAPHY (U)

AN EXPERIMENTAL TECHNIQUE IS PRESENTED FOR THE  
IDENTIFICATION OF THE MAJOR MINERAL CONSTITUENTS IN  
SMALL SAMPLES OF ATMOSPHERIC PARTICULATES. EACH  
SAMPLE IS DIVIDED INTO TWO PARTS; ONE IS EXAMINED BY  
X-RAY POWDER DIFFRACTION AT TWO WAVELENGTHS, COPPER  
AND CHROMIUM K ALPHA, AND THE OTHER IS EXAMINED BY  
INFRARED ABSORPTION. WITH THIS COMBINATION IT HAS  
BEEN POSSIBLE TO EXTEND COMPONENT CRYSTALLINE MINERAL  
IDENTIFICATION DOWN TO 1 MG OF TOTAL SAMPLE.  
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 603 019

ARMY ELECTRONICS RESEARCH AND DEVELOPMENT ACTIVITY WHITE  
SANDS MISSILE RANGE N MEX

THE COLOR IDENTIFICATION OF TRANSPARENT CRYSTALLINE  
PARTICLES WITH AN OPTICAL MICROSCOPE: A LITERATURE  
SURVEY OF DISPERSION STAINING, (U)

JUL 64 24P HOIDALE, GLENN R. ;  
REPT. NO. AFRDA-165  
PROJ: DA-1-G-620901-A-199  
TASK: 1-G-620901-A-19905

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (\*MINERALS, MICROSCOPY), (\*DUST,  
MICROSCOPY), CRYSTALS, COLORS, DIFFUSION, REFRACTIVE  
INDEX, MICROSCOPES, OPTICAL EQUIPMENT COMPONENTS,  
REVIEWS (U)

THE BRIEF SURVEY IS INTENDED TO PRESENT AN  
INTRODUCTION TO THE VARIOUS WAYS TO ACHIEVE  
DISPERSION STAINING COLORS BY MICROSCOPY WITH  
PARTICULAR APPLICATION TO ATMOSPHERIC MINERAL DUST  
IDENTIFICATION. THE EVOLUTION OF DISPERSION  
STAINING AS A MEANS FOR IDENTIFYING SMALL MINERAL  
PARTICLES IS TRACED FROM 1872 TO DATE. AN EXAMPLE  
OF HOW COLOR ARISES IS SHOWN SCHEMATICALLY AND  
GUIDELINES ARE PRESENTED FOR THE CHOICE OF A  
MICROSCOPE SYSTEM AND IMMERSION FLUIDS. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 607 089

FRANKFURT UNIV (WEST GERMANY)

INVESTIGATIONS ON TROPOSPHERIC WASH-OUT.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,

AUG 64

68P

GEORGII, HANS-WALTER ; WEBER,

ERICH ;

CONTRACT: AF61 052 249

MONITOR: AFCRL , 64 816

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (\*TROPOSPHERE, AIR POLLUTION), (\*AIR POLLUTION, ATMOSPHERIC PRECIPITATION), (\*ATMOSPHERIC PRECIPITATION, AIR POLLUTION), ATMOSPHERES, TRANSPORT PROPERTIES, WASTE GASES, DUST, AEROSOLS, METEOROLOGICAL PHENOMENA, CHEMICAL ANALYSIS (U)

THIS REPORT SUMMARIZES THE RESULTS OF CHEMICAL ANALYSES OF INDIVIDUAL CASES OF PRECIPITATION SAMPLED AT DIFFERENT LOCATIONS. THE LOCATIONS SHOWED A GREAT VARIETY WITH RESPECT TO ALTITUDE, CLIMATE AND LEVEL OF INDUSTRIAL AND ANTHROPOGENEOUS POLLUTION. FURTHERMORE DETAILED ANALYSES AND CONTINUOUS RECORDS OF THE TRACE-SUBSTANCE CONCENTRATION DURING INDIVIDUAL RAINFALLS ARE DISCUSSED. THE VARIATIONS OF THE CONCENTRATION DURING THE COURSE OF THE RAIN AND THEIR RELATIONS TO QUANTITY, INTENSITY AND TYPES OF RAIN AS WELL AS TO METEOROLOGICAL PARAMETERS, ARE DISCUSSED. FINALLY, PRELIMINARY STUDIES ON THE INCORPORATION OF TRACE-SUBSTANCES INTO CLOUD- AND RAIN-DROPS ARE PRESENTED, INDICATING THE RELATIVE IMPORTANCE OF RAINOUT COMPARED TO WASHOUT. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 609 363

CALIFORNIA UNIV LOS ANGELES DEPT OF METEOROLOGY

SURFACE WIND PATTERNS IN THE LOS ANGELES BASIN DURING  
'SANTA ANA' CONDITIONS. (U)

DESCRIPTIVE NOTE: PART 1 OF FINAL REPT. ON U.S.  
FOREST SERVICE RESEARCH PROJ. 2606.

SEP 64 R4P EDINGER, JAMES G. ; HELVEY,

ROGER A. ; BAUMHEFNER, DAVID;

CONTRACT: OCD-05-62-143, OCD-PS-64-24

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH PACIFIC  
SOUTHWEST FOREST AND RANGE EXPERIMENT STATION,  
FOREST SERVICE, BERKELEY, CALIF.

DESCRIPTORS: (\*FIRES, CALIFORNIA), (\*WIND, FLAME  
PROPAGATION), METEOROLOGICAL PHENOMENA, WEATHER  
FORECASTING, ATMOSPHERIC MOTION, HUMIDITY, GUSTS, AIR  
POLLUTION, DUST, SAND, SMOKE, FIRE SAFETY, TERRAIN,  
DIURNAL VARIATIONS, MAPS (U)

THE RESULTS OF AN ANALYSIS OF SEVEN YEARS OF  
'SANTA ANA' WIND SITUATIONS IS PRESENTED. THE  
SURFACE WIND FIELD OVER THE GREATER LOS ANGELES  
AREA IS PRESENTED FIRST IN STATISTICAL TERMS,  
PERCENTAGE FREQUENCY OF WIND DIRECTIONS AND MEAN WIND  
SPEEDS, AND THEN AS STREAMLINE ANALYSES OF INDIVIDUAL  
SITUATIONS. AREAS OF STRONG FLOW AND WEAK FLOW ARE  
DELINEATED AS WELL AS THE DIURNAL FLUCTUATIONS OF THE  
MAJOR FEATURES IN THE SURFACE FLOW PATTERN.  
(AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 611 379

ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER WASHINGTON D  
C

DIURNAL CHANGES OF THE DUST CONTENT OF THE SURFACE  
LAYER OF THE ATMOSPHERE, (U)

DEC 64 9P MAKHONKO, K. P. ;  
REPT. NO. FSTC-381-T64-47  
MONITOR: TT , 65-61759

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. FROM UNIDENTIFIED RUSSIAN  
SOURCE, P. 253-258.

DESCRIPTORS: (\*DUST, ATMOSPHERES), (\*ATMOSPHERES,  
FALLOUT), (\*FALLOUT, ATMOSPHERES), MICROMETEOROLOGY,  
RADIOACTIVITY, SOILS, WIND, TRANSPORT PROPERTIES,  
DIURNAL VARIATIONS, MEASUREMENT, SIMULATION, TRACER  
STUDIES, INSTRUMENTATION, USSR (U)

AS A RESULT OF CONSTANTLY ACTING WIND EROSION,  
RADIOACTIVE FALLOUT MATTER, TOGETHER WITH SOIL  
PARTICLES, AGAIN ENTERS INTO THE ATMOSPHERE,  
INCREASING THE CONCENTRATION OF RADIOACTIVE DUST IN  
THE AIR. IN ORDER TO STUDY CERTAIN DETAILS OF THIS  
SECONDARY PROCESS SPECIAL MODEL EXPERIMENTS ARE  
FORMULATED FOR CLARIFICATION OF THE DIURNAL VARIATION  
OF THE FALLOUT OF VIRTUALLY WEIGHTLESS DUST,  
CONTINUOUSLY FORMING ON THE UNDERLYING SURFACE. THE  
INVESTIGATION WAS CARRIED OUT BY THE LABELED ATOMS  
METHOD AND CONDITIONS WERE CREATED MAKING IT POSSIBLE  
TO EXCLUDE THE DISTORTING INFLUENCE OF GLOBAL  
FALLOUT. THE FALLOUT AT A HEIGHT OF 1 M ABOVE THE  
EARTH'S SURFACE WAS RECORDED AUTOMATICALLY ON STICKY  
SHEETS. A SIMPLE APPARATUS WITH A CLOCK MECHANISM  
WHICH WOUND THE STICKY SHEET AT PRESCRIBED INTERVALS  
WAS USED. THE EXPERIMENTS WERE MADE IN THE SUMMER  
IN A MEADOW WITH A WELL-DEVELOPED GRASS COVER. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 622 681

ARIZONA UNIV TUCSON INST OF ATMOSPHERIC PHYSICS

A MICROBAROPHONE FOR DUST DEVIL PRESSURE  
MEASUREMENTS,

(U)

SEP 64 7P SINCLAIR, PETER C. ;

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PUB. IN JOURNAL OF APPLIED  
METEOROLOGY V4 N1 P11621 FEB 1965 (COPIES NOT  
AVAILABLE TO DDC OR CLEARINGHOUSE CUSTOMERS). RESEARCH  
SUPPORTED BY OFFICE OF NAVAL RESEARCH.

DESCRIPTORS: (\*DUST STORMS, MICROBAROMETRIC WAVES),  
(\*MICROBAROMETRIC WAVES, DUST STORMS), (\*PRESSURE GAGES,  
METEOROLOGICAL INSTRUMENTS), VORTICES, WIND, SAND,  
STORMS, DESERTS, BAROMETRIC PRESSURE, OSCILLATION,  
MEASUREMENT, TRANSDUCERS

(U)

THE DESIGN AND CONSTRUCTION OF A SMALL, HIGHLY  
RESPONSIVE PRESSURE INSTRUMENT WITH A SENSITIVITY OF  
APPROXIMATELY 0.1 MB IS DISCUSSED. TWO PRESSURE  
SENSORS, OR MICROBAROPHONES, WERE USED ON A MOBILE  
TOWER TO MEASURE PRESSURE VARIATIONS NEAR AND WITHIN  
SEVERAL DUST DEVILS. A PRESSURE TRACE OF A DUST  
DEVIL PENETRATION IS PRESENTED. THE MICROBAROPHONE  
IS CONSIDERED TO HAVE SUFFICIENT MERIT THAT IT MAY BE  
OF USE IN OTHER APPLICATIONS INVOLVING MICRO-PRESSURE  
MEASUREMENTS. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 622 733

ARIZONA UNIV TUCSON INST OF ATMOSPHERIC PHYSICS

ON THE ROTATION OF DUST DEVILS,

(U)

65 4P SINCLAIR, PETER C. ;  
REPT. NO. 157

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PUB. IN BULLETIN OF THE AMERICAN  
METEOROLOGICAL SOCIETY V46 N7 P388-91 1965 (COPIES NOT  
AVAILABLE TO DDC OR CLEARINGHOUSE CUSTOMERS). WORK  
SUPPORTED BY OFFICE OF NAVAL RESEARCH.

DESCRIPTORS: (\*DUST, STORMS), (\*SAND, STORMS), (\*AIR  
MASS ANALYSIS, STORMS), DESERTS, WIND, ROTATION,  
VORTICES, METEOROLOGY

(U)

A NUMBER OF AUTHORS HAVE, IN THE PAST, BEEN OF THE  
OPINION THAT DUST DEVIL DIRECTION OF ROTATION IS  
CONTROLLED BY THE EARTH'S ROTATION. WHILE THIS  
CONTENTION CAN BE EASILY ATTACKED THROUGH THEORETICAL  
ARGUMENTS, ACTUAL OBSERVATIONS BECOME THE DECIDING  
FACTOR. THE OBSERVATIONS PRESENTED, BELIEVED TO BE  
THE LARGEST COLLECTION ON RECORD, SHOW QUITE  
CONCLUSIVELY THAT DUST DEVILS IN GENERAL HAVE NO  
PREFERRED DIRECTION OF ROTATION. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 623 639

NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

SIZE ANALYSIS OF MINUS 44 MICRON DUST PARTICLES, (U)

AUG 65 12P NUCKOLLS, MELVIN J. FULLER,

ROSS K. J

REPT. NO. USNRDL-TR-907

PROJ: PMR WR4 0015 NWET2 6A

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (\*DUST, PARTICLE SIZE), ULTRASONIC  
RADIATION, ANALYSIS, NUCLEAR EXPLOSIONS, GAS FILTERS (U)

A METHOD OF PARTICLE SIZE ANALYSIS UTILIZING  
ULTRASONIC ENERGY AND MICRO MESH SIEVES HAS BEEN  
DEVELOPED FOR DUST PARTICLES WITH DIAMETERS LESS THAN  
44 MICRONS. THE PARTICLE SIZE DISTRIBUTIONS OF  
VOLCANIC DUST AND DUST FROM GROUND SURFACE EXPLOSIONS  
WERE DETERMINED. THE NEW METHOD YIELDS DISCRETE  
PARTICLE SIZE FRACTIONS, RATHER THAN FRACTIONS THAT  
CONTAIN ALL PARTICLE SIZES LESS THAN A STATED SIZE,  
AS PRODUCED BY LIQUID SEDIMENTATION METHODS.  
PARTICULATE SAMPLES WERE WET SIEVED THROUGH A 44-  
MICRON TYLER SIEVE ONTO A 40-MICRON MICRO MESH  
SIEVE. THE SURFACE OF THE SCREEN AND THE PARTICLES  
WERE IMMERSSED IN WATER IN AN ULTRASONIC TANK FOR  
A FEW MINUTES. PARTICLES WITH DIAMETERS LESS THAN  
40 MICRONS PASSED THROUGH AND WERE COLLECTED AND  
TRANSFERRED TO A 30 MICRON SCREEN. THE PROCESS WAS  
REPEATED FOR 30-, 20-, AND 10-MICRON MICRO MESH  
SIEVES. EACH SIEVE AND THE MATERIAL RETAINED BY IT  
WERE DRIED IN AN OVEN AT 110C. THE DRIED  
PARTICLES WERE RECOVERED, WEIGHED, AND LATER USED FOR  
PHOTOMICROGRAPHIC STUDIES, DENSITY MEASUREMENTS, ETC.  
(AUTHOR) (U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 624 741 6/5 13/2  
TOKYO UNIV (JAPAN) DEPT OF PHYSICAL THERAPY AND  
MEDICINE

RESPIRATORY DISEASES DUE TO AIR POLLUTION ON TOKYO-  
YOKOHAMA AREA. (U)

DESCRIPTIVE NOTE: FINAL REPT., 15 APR 64-14 APR 65,  
JUL 65 42P. ISHIZAKI, TATSUSHI;  
CONTRACT: DA-92-557-FEC-37308  
PROJ: DA-2-N-014501-B-71-D  
TASK: 00-008FE  
MONITOR: ARDG(FE) J-188

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (\*RESPIRATORY DISEASES, AIR POLLUTION),  
(\*AIR POLLUTION, RESPIRATORY DISEASES), ACETYLCHOLINE,  
ALLERGIC DISEASES, CARBON MONOXIDE, SULFUR COMPOUNDS,  
DIOXIDES, LUNG, BRONCHI, RESPIRATION, TOXICITY, DUST,  
THRESHOLDS(PHYSIOLOGY), GUINEA PIGS, JAPAN (U)

THE RESEARCH CENTERED UPON THE QUESTION OF WHETHER  
AIR POLLUTANTS, SUCH AS SULFUR DIOXIDE ETC.,  
INFLUENCE THE ONSET OF ASTHMA ATTACK IN PATIENTS AS  
WELL AS EXPERIMENTAL ANIMALS. THE RESPIRATORY  
SYMPTOMS AMONG THE PATIENTS OF CHRONIC BRONCHITIS  
WERE FOLLOWED UP SO AS TO CLARIFY THE CORRELATION  
BETWEEN THE INCIDENCE OF THEM AND THE ENVIRONMENTAL  
FACTORS RELATED TO THE AIR POLLUTION. THE RESULTS  
OF INVESTIGATION ARE SUMMARIZED AS FOLLOWS: (1)  
THE INFLUENCE OF SULFUR DIOXIDE TO GUINEA PIGS WAS  
STUDIED ON THE EXPERIMENTAL ASTHMA, MEASURING THE  
RESPIRATORY SENSITIVITY TO ACETYLCHOLINE.  
EXPOSURES TO 30 PPM SULFUR DIOXIDE SEEMED TO  
INCREASE THE RESPIRATORY SENSITIVITY TO  
ACETYLCHOLINE, THOUGH STATISTICALLY NOT SIGNIFICANT.  
(2) PULMONARY DIFFUSING CAPACITY FOR CARBON  
MONOXIDE WAS MEASURED AMONG ASTHMATIC PATIENTS  
INCLUDING SIMILAR TYPE TO T-Y ASTHMA AS WELL AS  
NORMAL INDIVIDUALS. NO SIGNIFICANT DIFFERENCES  
WERE DETECTED AMONG D SUB LCO OF EACH GROUP.  
ACCORDINGLY, IT IS SUGGESTED THAT THERE WERE NO  
SUCH CHANGES AMONG ASTHMATIC PATIENTS INCLUDING T-  
Y TYPE AS SEEN IN THE LUNG OF EMPHYSEMA OR ALVEO-  
CAPILLARY BLOCK. (3) PATIENTS WITH CHRONIC  
BRONCHITIS PICKED UP FROM THE PREVIOUS SURVEY WERE  
CONSIDERED TO BE SENSITIVE TO THE CHANGES OF AIR  
POLLUTANTS IN THE AIR,

24

(U)

UNCLASSIFIED

00M07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 625 615 15/2 6/13  
ARMY BIOLOGICAL LABS FREDERICK MD

DYNAMICS OF A BACTERIAL AEROSOL IN THE DUST AND DROP  
PHASE, (U)

JUN 65 12P VLODAVETS, V. V. ;  
REPT. NO. TRANSLATION-1389  
MONITOR: TT, 66-60104

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. FROM MIKROBIOLOGIYA (USSR)  
V33 N1 1964.

DESCRIPTORS: (\*BACTERIAL AEROSOLS, DYNAMICS),  
(\*STAPHYLOCOCCUS, DISTRIBUTION), DUST, DROPS, HUMIDITY,  
USSR, COLLOIDS (U)

IN A 250 LITER EXPERIMENTAL CHAMBER, THE DYNAMICS  
WERE STUDIED OF AN AEROSOL OF STAPHYLOCOCCUS ALBUS  
IN THE DROP AND DUST PHASE. AFTER DISPERSION OF  
THE BACTERIAL SUSPENSION OR BACTERIAL DUST, THE  
CONCENTRATION OF THE AEROSOL GRADUALLY DECREASED.  
VIABLE CELLS OF STAPHYLOCOCCI WERE EXPOSED IN THE  
AIR STILL AFTER 6-8 HOURS. MOST SUITABLE FOR THE  
PROLONGED PRESERVATION OF AN AEROSOL OF STAPHYLOCOCCI  
IN THE AIR IS DISPERSION OF A BACTERIAL SUSPENSION,  
PREPARED IN DISTILLED WATER, WHEREAS AN 0.85%  
SOLUTION OF NaCl LEAST OF ALL PROMOTED THE  
LENGTHY PRESERVATION OF STAPHYLOCOCCI IN THE AIR.  
THE DUST PHASE OF AN AEROSOL IS KINETICALLY LESS  
STABLE THAN THE DROP PHASE, WHICH IS APPARENTLY  
CONNECTED WITH THE COLLOIDAL PROPERTIES OF PARTICLES  
OF BACTERIAL DUST, THEIR SIZE AND HYGROSCOPICITY.  
A DECREASE IN RELATIVE AIR HUMIDITY PROMOTES AN  
INCREASE OF THE TIME OF OCCURRENCE OF STAPHYLOCOCCI  
IN THE DROP AND DUST PHASES OF AN AEROSOL. HIGH  
HUMIDITY ASSISTS THE SETTLING DOWN OF BACTERIAL DROPS  
AS WELL AS OF PARTICLES OF BACTERIAL DUST AND THE  
LOWERING OF THE CONCENTRATION OF THE AEROSOL.  
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 629 527 4/2 18/8

NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

DISTRIBUTION OF VOLCANIC FALLOUT IN AND ABOUT A ONE-STORY RESIDENCE. (U)

AUG 65 62P KAWAHARA, F. K. CREW, ROBERT J.

REPT. NO. USNRDL-TR-953,  
TASK: OCD-3118A

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (\*AIR POLLUTION, VOLCANOES), (\*VOLCANOES, AIR POLLUTION), (\*FALLOUT, SIMULATION), BUILDINGS, PARTICLES, DUST, DISTRIBUTION, ATMOSPHERES, TRANSPORT PROPERTIES, HEALTH PHYSICS, CIVIL DEFENSE (U)

THE SAND-LIKE DEBRIS FROM VOLCANO IRAZU IN COSTA RICA CLOSELY RESEMBLES THE TYPE OF FALLOUT PRODUCED BY A NEARSURFACE OR UNDERGROUND NUCLEAR DETONATION. THE ACTIVITY OF THE VOLCANO DURING APRIL AND MAY 1964 PRESENTED AN OPPORTUNITY TO USE THIS PHENOMENON IN A FIELD-SCALE STUDY OF SOME RELATIONSHIPS BETWEEN URBAN RECLAMATION AND NUCLEAR FALLOUT CONTAMINATION. THE INVESTIGATION WAS DIVIDED INTO TWO PHASES: (I) DISTRIBUTION OF DEBRIS INSIDE A ONE-STORY RESIDENCE; AND (II) DISTRIBUTION OUTSIDE THE RESIDENCE. IN PHASE I, IT WAS OBSERVED THAT PARTICLE SIZE DISTRIBUTIONS INSIDE THE HOUSE DID NOT DIFFER GREATLY FROM THOSE DEPOSITED OUTSIDE. MASS LOADINGS INSIDE WERE A FACTOR OF 50 LESS THAN THOSE OUTSIDE. IT WAS CONCLUDED THAT, IF THIS WERE A CASE OF RADIOACTIVE FALLOUT, THE RATIO OF OUTSIDE DOSE TO INSIDE DOSE WOULD BE REDUCED SIGNIFICANTLY IN THE VICINITY OF THE WINDOW THROUGH WHICH AIR IS MOVING. IN PHASE II, IT WAS OBSERVED THAT IN THE ABSENCE OF RAIN, THE PARTICLE SIZE DISTRIBUTION AND MASS DEPOSITED WAS UNIFORM FROM ONE SAMPLE LOCATION TO ANOTHER, ONLY MINOR VARIATIONS HAVING BEEN OBSERVED FROM DAY TO DAY. ON THIS BASIS, IT WAS CONCLUDED THAT RECLAMATION TESTS USING UNIFORMLY DISTRIBUTED SYNTHETIC FALLOUT ARE REALISTIC EVEN WHEN THE SURFACE CONFIGURATIONS ARE QUITE COMPLEX. WHEN RAIN ACCOMPANIED THE DEBRIS DEPOSITION, HOWEVER, DIFFERENT RESULTS WERE OBSERVED. PARTICLE SIZE DISTRIBUTIONS AND MASS LOADINGS WERE A FUNCTION OF REDISTRIBUTION AND VARIED WITH SAMPLE LOCATION.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 631 181 13/2 16/1 4/2  
PACIFIC MISSILE RANGE POINT MUGU CALIF

THREE-DIMENSIONAL, ANALYTIC SOLUTIONS TO THE PROBLEMS  
OF DIFFUSION OF WIND-DRIVEN CONTAMINATION. (U)

DESCRIPTIVE NOTE: TECHNICAL MEMO.,  
APR 66 26P LUDLOFF, H. F. ;  
REPT. NO. PMR-TM-66-4,

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPT. ON STUDY OF DIFFUSION OF  
CONTAMINATION FROM A SOURCE OF FINITE EXTENT, CONT.  
OF PMR-TM-65-4.

DESCRIPTORS: (\*AIR POLLUTION, DIFFUSION), (\*WIND, AIR),  
(\*GUIDED MISSILE RANGES, AIR POLLUTION), DUST, AEROSOLS,  
WASTE GASES, EQUATIONS, CONTAMINATION, GUIDED MISSILE  
SAFETY, SOURCES, STATISTICAL (U)

ESTIMATES OF CRITICAL DISTANCES, UP TO WHICH DUST,  
AEROSOLS, AND (TOXIC) FUMES MAY BE DRIVEN, UNDER  
THE INFLUENCE OF VARIOUS WIND AND DIFFUSIVITY  
CONDITIONS, REQUIRE THAT THREE-DIMENSIONAL SOLUTIONS  
TO THE PROBLEM OF WIND-DRIVEN CONTAMINATION BE  
DERIVED, FOR APPLICATION TO RANGE SAFETY PROBLEMS.  
THE FOLLOWING WORK WAS DIRECTED TO THIS END:

(1) ANALYTIC SOLUTIONS FOR CONSTANT WIND AND  
CONSTANT DIFFUSIVITY WERE DERIVED; (2) THREE -  
DIMENSIONAL ANALYTIC SOLUTIONS WERE DERIVED, UNDER  
THE ASSUMPTION THAT WIND SPEED AND EDDY DIFFUSIVITY  
VARY, EITHER IN ACCORDANCE WITH THE CONJUGATE POWER  
LAWS, OR IN A MORE GENERAL FASHION; (3) A NEW  
METHOD OF SOLUTION IS SUGGESTED WHICH MAY BE USED FOR  
SOLVING DIFFUSION PROBLEMS OF A MORE GENERAL NATURE;  
(4) FIVE PARTICULAR, THREE-DIMENSIONAL PARABOLIC  
SOURCE SOLUTIONS WERE DERIVED. (U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 634 671 20/4 21/5

ARMY TANK-AUTOMOTIVE CENTER WARREN MICH

DEPOSITION OF PARTICLES IN A TURBULENT SLOT FLOW,

(U)

JUN 66 14P DOBBS, HERBERT H. ;WISS, JOHN  
W. ;

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PRESENTED AT THE ARMY SCIENCE  
CONFERENCE (1966), U. S. MILITARY ACADEMY, WEST  
POINT, N. Y., 14-17 JUNE 1966. COMPLETE  
PROCEEDINGS AVAILABLE IN TWO UNCLASSIFIED VOLUMES AS AD-  
634 615 AND AD-634 616 AND ONE UNCLASSIFIED VOLUME  
AVAILABLE TO QUALIFIED DDC USERS.

DESCRIPTORS: (\*AERODYNAMIC SLOTS, PARTICLES), (\*DUST,  
DEPOSITION), TURBULENCE, AIR POLLUTION, CONTAMINATION,  
AEROSOLS, DENSITY, GAS FILTERS, FLOW VISUALIZATION,  
INSTRUMENTATION, DIGITAL COMPUTERS (U)

THE CHANGE IN CONCENTRATION IN THE DIRECTION OF  
FLOW IS OF PRIMARY CONCERN IN THE PAPER. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 636 593 4/1

MINNESOTA UNIV MINNEAPOLIS SCHOOL OF PHYSICS

ANNUAL PROGRESS REPORT.

(U)

JUN 66 57P MANTIS, HOMER T. ; ROSEN, JAMES  
M. ; GILLET, F. C. ; PEPIN, T. J. ;  
REPT. NO. AP-24;  
CONTRACT: NONR-710(22),

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPT. ON ATMOSPHERIC PHYSICS  
RESEARCH.

DESCRIPTORS: (\*ATMOSPHERIC MOTION, EQUATIONS OF MOTION),  
(\*DUST, ATMOSPHERES), (\*LIGHT TRANSMISSION,  
ATMOSPHERES), SCINTILLATION, METEOROLOGY (U)

CONTENTS: AN EXPERIMENTAL STUDY OF THE EQUATION OF  
MOTION IN THE FREE ATMOSPHERE BY HOMER T. MANTIS;  
THE VERTICAL DISTRIBUTION OF DUST; SOLAR  
EXTINCTION; DUST COLLECTION FROM THE STRATOSPHERE;  
AND STELLAR EXTINCTION AND SCINTILLATION. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 636 858 7/4 14/2  
ARMY BIOLOGICAL LABS FREDERICK MD

A PARTICLE SIZE ANALYZER FOR AEROSOLS. (U)

62 12P MUMMA, VICTOR R. ; THOMAS,  
ALBERT L. , JR. ; COLLINS, ROBERT H. , III ;

UNCLASSIFIED REPORT

AVAILABILITY: PUBLISHED IN ANNALS OF THE NEW  
YORK ACADEMY OF SCIENCES V99 ART2 P298-308 29 JUN  
1962.

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH  
SOUTHERN RESEARCH INST., BIRMINGHAM, ALA.

DESCRIPTORS: (\*AEROSOLS, \*PARTICLE SIZE),  
INSTRUMENTATION, GEOMETRIC FORMS, LIGHT, SCATTERING, AIR  
POLLUTION (U)

AN INSTRUMENT FOR COUNTING AND SIZING AEROSOLIZED  
PARTICLES IS DESCRIBED. IT IS BASED ON THE  
OBSERVATION OF SCATTERED LIGHT AS THE PARTICLES PASS  
THROUGH AN ILLUMINATED AREA. THE APPLICATION OF  
THE DEVICE TO THE STUDY OF PARTICLE SHAPE IS  
DESCRIBED, AND ITS APPLICATION TO PRACTICAL USES IS  
INDICATED. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 637 313 6/18 8/7  
STANFORD RESEARCH INST MENLO PARK CALIF

OPERATION CENIZA-ARENA: THE RETENTION OF FALLOUT  
PARTICLES FROM VOLCAN IRAZU (COSTA RICA) BY PLANTS  
AND PEOPLE. PART ONE. (U)

JAN 66 374P MILLER, CARL F. LEE, HONG ;  
PROJ: SRI-MU-4890,

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (\*FALLOUT, CONTAMINATION), (\*VOLCANOES,  
CONTAMINATION), PLANTS(BOTANY), HUMANS, PARTICLES, AIR  
POLLUTION, COSTA RICA, METEOROLOGY (U)  
IDENTIFIERS: CENIZA ARENA OPERATION (U)

THE REPORT SUMMARIZES DATA ON THE RETENTION OF  
FALLOUT PARTICLES EJECTED BY VOLCAN IRAZU  
(COSTA RICA) BY THE FOLIAGE OF VEGETABLES AND  
NATIVE PLANTS THAT WERE OBTAINED FROM FIELD  
EXPERIMENTS IN APRIL AND MAY 1964. THE DATA  
SHOW THAT THE FOLIAGE OF PLANTS RETAIN, INITIALLY,  
ALL SIZES OF FALLING PARTICLES, AND WHEN THE RELATIVE  
HUMIDITY IS GREATER THAN ABOUT 90 PERCENT, THE  
FOLIAGE RETAINS ABOUT TWICE THE WEIGHT OF PARTICLES  
THAT IS RETAINED UNDER DRIER CONDITIONS.  
METEOROLOGICAL DATA WERE OBTAINED, AND THE  
INFLUENCE OF THESE ON THE DATA IS DISCUSSED. A FEW  
DATA ON PERSONNEL CONTAMINATION WERE OBTAINED. THE  
MASS MEDIAN PARTICLE DIAMETER OF THE VOLCANIC DERRIS  
(TERMED CENIZA-AREANA) THAT DEPOSITED AT THE  
VARIOUS COLLECTING STATIONS GENERALLY WAS BETWEEN 50  
AND 100 MICRONS. IN GENERAL, IT WAS FOUND THAT THE  
FOLIAGE RETAINED MORE OF THE DEPOSITING PARTICLES  
THAN REPORTED FOR NUCLEAR WEAPON FALLOUT IN THE  
DESERT REGIONS OF THE UNITED STATES AND  
AUSTRALIA; THIS DIFFERENCE WAS ATTRIBUTED MAINLY TO  
DIFFERENCES IN METEOROLOGICAL FACTORS ALTHOUGH  
SAMPLING TIMES AND PROCEDURES ALSO WERE CONTRIBUTING  
FACTORS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 641 706 8/7

ATMOSPHERIC SCIENCES LAB WHITE SANDS MISSILE RANGE N  
MEX

A MINERAL TRANSITION IN ATMOSPHERIC DUST TRANSPORT, (U)

AUG 66 26P RIEDMULLER, G. F. ; BARBER, T. L.

PROJ: DA-1-P-620901-A-199

TASK: 1-P-620901-A-19905

MONITOR: ECOM 5072

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MINERALS, INFRARED SPECTROSCOPY), DUST,  
AIRBORNE, ABSORPTION SPECTRA, IDENTIFICATION (U)

THE MINERALS MIRABILITE AND THENARDITE DIFFER ONLY  
IN NUMBER OF WATERS OF CRYSTALLIZATION, AND MAY  
EASILY CHANGE FROM ONE STATE TO THE OTHER. THE  
IDENTIFICATION OF THE MINERALS IN AIRBORNE DUST BY  
INFRARED ABSORPTION SPECTROSCOPY AND THE RAPIDITY OF  
THE TRANSITION ARE DISCUSSED. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 643 304 6/13 4/1  
SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX BIOSCIENCES  
BRANCH

MICROORGANISMS OF THE UPPER ATMOSPHERE. V.  
RELATIONSHIP BETWEEN FRONTAL ACTIVITY AND THE  
MICROPOPULATION AT ALTITUDE,

(U)

OCT 65 10P FULTON, JOHN D. ;  
PROJ: AF-7754  
MONITOR: SAM TR-65-297

UNCLASSIFIED REPORT

AVAILABILITY: PUBLISHED IN APPLIED MICROBIOLOGY  
V14 N2 P245-50 1966.  
SUPPLEMENTARY NOTE: SEE ALSO AD-641 821.

DESCRIPTORS: (\*MICROORGANISMS, \*UPPER ATMOSPHERE),  
ALTITUDE, METEOROLOGICAL PHENOMENA, ATMOSPHERIC MOTION,  
DUST, AIR, SAMPLING, COLLECTING METHODS, AIR MASS  
ANALYSIS

(U)

THE RELATIONSHIP BETWEEN FRONTAL ACTIVITY AND THE  
MICROPOPULATION OF THE ATMOSPHERE AT ALTITUDE IS  
DESCRIBED. IT IS SHOWN THAT CERTAIN OF THE  
METEOROLOGIC EVENTS ASSOCIATED WITH FRONTAL ACTIVITY  
QUANTITATIVELY MODIFY THE MICROPOPULATION OF THE  
ATMOSPHERE. PRECIPITATION ASSOCIATED WITH FRONTAL  
PASSAGE REDUCES THE MICROPOPULATION AT ALTITUDE,  
WHEREAS FRONTAL ACTIVITY WITH HIGH LEVELS OF  
ASSOCIATED SURFACE AND ATMOSPHERIC TURBULENCE RESULTS  
IN GREAT INCREASES IN MICROPOPULATIONS OF THE UPPER  
ATMOSPHERE--PARTICULARLY IN THOSE SITUATIONS WHERE  
SURFACE CONDITIONS ARE CONDUCTIVE TO THE DEVELOPMENT  
OF DUST. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 644 817 4/1 7/2  
ATMOSPHERIC SCIENCES LAB WHITE SANDS MISSILE RANGE N  
MEX

A REAGENT FOR THE SIMULTANEOUS MICROSCOPIC  
DETERMINATION OF QUARTZ AND HALIDES, (U)

OCT 66 19P NUSBAUM, HENRY ;  
PROJ: DA-1-V-014501-B-53-A  
TASK: 1-V-014501-B-53-A-13  
MONITOR: ECOM 5085

UNCLASSIFIED REPORT

DESCRIPTORS: (\*CHEMICAL INDICATORS, \*AEROSOLS), (\*ROCK  
SALT, CHEMICAL ANALYSIS), (\*QUARTZ, CHEMICAL ANALYSIS),  
DUST, ATMOSPHERES, MICROSCOPY, DETERMINATION,  
BIBLIOGRAPHIES, SCATTERING (U)

A REAGENT WAS DISCOVERED WHEREBY THE TECHNIQUES OF  
DISPERSION STAINING MICROSCOPY AND SPOT TESTING MAY  
BE COMBINED TO DISTINGUISH HALITE FROM QUARTZ IN  
SAMPLES OF ATMOSPHERIC DUST. THE PREPARATION OF  
THE REAGENT AND ITS APPLICATION ARE DISCUSSED.  
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 646 465 4/1  
STANFORD RESEARCH INST MENLO PARK CALIF

STUDIES OF THE CHEMISTRY OF UNPOLLUTED  
ATMOSPHERES.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
NOV 66 114P JUNGE, CHRISTIAN E. ;  
CONTRACT: CWB-11151  
PROJ: SRI-PAU-5644

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH MAINZ  
UNIV. (WEST GERMANY).

DESCRIPTORS: (\*ATMOSPHERES, CHEMICAL PROPERTIES),  
(\*TROPOSPHERE, \*AEROSOLS), PARTICLE SIZE, DISTRIBUTION,  
CHLORIDES, SULFUR, SEA WATER, SPRAYS, PACIFIC OCEAN,  
ALTITUDE, SAMPLERS, CHEMICAL ANALYSIS, WEST GERMANY (U)

MEASUREMENTS OF AEROSOL CONCENTRATION AND SIZE  
DISTRIBUTION WERE MADE WITH A LIGHT SCATTERING TYPE  
PARTICLE COUNTER AND CONDENSATION NUCLEI COUNTERS AT  
SEA LEVEL AND 2200 METER ALTITUDES USING SITES AT  
CAPE BLANCO, AND CRATER LAKE, OREGON.  
THE DATA COLLECTED IN MARINE AIR MASSES SUPPORT  
EARLIER FINDINGS OF SEA-SPRAY AEROSOL SIZE  
DISTRIBUTIONS AND LACK OF CHEMICAL FRACTIONATION  
DURING BUBBLE BURST AEROSOL FORMATION. THE DATA  
INDICATE THAT SIGNIFICANT AMOUNTS OF SEA SPRAY  
AEROSOL DO NOT PENETRATE TO LOW AND MID-TROPOSPHERIC  
ALTITUDES ABOVE 2000 METERS. THE AEROSOLS TYPICAL  
OF THIS ELEVATION WERE FOUND TO HAVE SIZE  
DISTRIBUTIONS WELL APPROXIMATED BY A POWER LAW WITH  
AN EXPONENT OF 3 TO 4. THEY WERE FOUND TO HAVE  
SULFUR TO CHLORIDE RATIOS OF ABOUT 8 AND CONSIDERABLE  
CONCENTRATIONS OF SUBSTANCES OTHER THAN SULFUR AND  
CHLORIDE. HIGH ALTITUDE TROPOSPHERIC AIR MASS  
AEROSOLS, OBSERVED ON THIS PROGRAM AT CRATER LAKE  
DURING PERIODS OF SUBSIDENCE, HAVE LOWER  
CONCENTRATIONS THAN FOUND FOR LOWER ALTITUDE  
TROPOSPHERIC AEROSOLS AND THEIR POWER LAW  
REPRESENTATIONS ARE CHARACTERIZED BY LOWER  
EXPONENTIAL VALUES. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 647 582 6/5 13/2  
YODOGAWA CHRISTIAN HOSPITAL OSAKA (JAPAN)

AIR POLLUTION ASTHMA IN OSAKA, JAPAN.

(U)

DESCRIPTIVE NOTE: PROGRESS REPT.,  
DFC 66 25P BUSH, OVID B. ;  
CONTRACT: DA-92-557-FEC-37767  
PROJ: DA-3A025601A827-00  
TASK: 046FE  
MONITOR: ARDG(FE) J-222-3

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AIR POLLUTION, \*RESPIRATORY DISEASES),  
PUBLIC HEALTH, ALLERGIC DISEASES, IMMUNITY, BRONCHI,  
DISEASES, AIR, SAMPLERS, INSTRUMENTATION, JAPAN (U)

DURING THE PAST YEAR THERE HAS BEEN A MARKED  
DECREASE IN THE NUMBER OF CASES OF BRONCHITIS SEEN BY  
THE ARMED FORCES IN THE KANTO PLAIN AREA AS  
WELL AS BY THE CIVILIAN HOSPITAL IN OSAKA. THIS  
FINDING MAY LEND SUPPORT TO THE CONCEPTION OF  
IMMUNITY CONFERRED BY RESPIRATORY ILLNESSES.

DURING THE PAST YEAR 64 OF CHRONIC BRONCHITIS,  
ACUTE BRONCHITIS, OR BRONCHIAL ASTHMA WERE STUDIED.  
SEVEN CASES DID NOT COOPERATE FOR THE PULMONARY  
FUNCTION STUDIES. THESE CASES WERE STUDIED BY  
QUESTIONNAIRE, PHYSICAL EXAMINATION, LABORATORY, X-  
RAY AND PULMONARY FUNCTION TEST. THERE WAS ONE  
CASE WHO HAD BRONCHIAL ASTHMA, BUT HAD A DEFINITE  
RELATIONSHIP OF AIR POLLUTION TO HER ASTHMA. THIS  
PERSON HAS GREATLY IMPROVED IN AN AIR FILTERED AND  
AIR CLEANED ROOM. IN COOPERATION WITH THE UNITED  
STATES PUBLIC HEALTH SERVICE DIVISION OF  
AIR POLLUTION, SO2 BUBBLERS AND PARTICULATE  
COLLECTORS AS WELL AS THE HIGH VOLUME AIR SAMPLER,  
ARE BEING USED. WEATHER INFORMATION  
INSTRUMENTATION ESTABLISHED AT THE HOSPITAL WILL AID  
IN THE FINAL ANALYSIS OF THE RECORDS.  
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 650 745 13/8 17/7  
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

A DUSTLESS FACTORY, A SPECIAL ENVIRONMENTAL  
REQUIREMENT IN THE MANUFACTURE OF PRECISION  
GYROSCOPES, (U)

JAN 67 12P WU, MING ;  
REPT. NO. FTD-HT-66-412  
MONITOR: TT 67-61593

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF HANG K'UNG CHIH  
SHIH (CHINESE PEOPLE'S REPUBLIC) V2 N7 P8-10  
1965.

DESCRIPTORS: (\*INDUSTRIAL PLANTS, CLEAN ROOMS),  
(\*GYROSCOPES, MANUFACTURING), CHINA, DUST (U)

THE ARTICLE REVIEWS THE MANUFACTURE, TESTING,  
DESIGN, AND EMPLOYMENT OF GYROSCOPES IN HIGH-SPEED  
AIRCRAFT AND THE ICBM. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 652 115 3/2

MASSACHUSETTS INST OF TECH LEXINGTON LINCOLN LAB

THE EARTH'S DUST BELT: FACT OR FICTION. PART 1.  
FORCES PERTURBING DUST PARTICLE MOTION; PART 2.  
GRAVITATIONAL FOCUSING AND JACOBI CAPTURE; PART 3.  
LUNAR EJECTA; PART 4. SUNLIGHT-PRESSURE AIR-DRAG  
CAPTURE, (U)

APR 66 45P

SHAPIRO, I. I. ; LAUTMAN, D.

A. ; COLOMBO, G. ;

REPT. NO. JA-2785

CONTRACT: AF 19(628)-5167, NSG-87-60

MONITOR: ESD TR-67-192

UNCLASSIFIED REPORT

AVAILABILITY: PUBLISHED IN JOURNAL OF  
GEOPHYSICAL RESEARCH V71 N23 P5695-5751 DEC 1  
1966.

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH  
SMITHSONIAN ASTROPHYSICAL OBSERVATORY, CAMBRIDGE,  
MASS., HARVARD COLL. OBSERVATORY, CAMBRIDGE,  
MASS., AND PADUA UNIV. (ITALY).

DESCRIPTORS: (\*DUST, MOTION), (\*PARTICLES, PERTURBATION  
THEORY), EARTH(PLANET), GRAVITY, FOCUSING, SUN, LIGHT,  
PRESSURE, AIR, DRAG, ORBITS, ITALY, MOON, METEORS,  
IMPACT, INTERSTELLAR MATTER (U)

FORCES INFLUENCING THE MOTION OF SMALL DUST  
PARTICLES ORBITING NEAR THE EARTH AND IN  
INTERPLANETARY SPACE ARE STUDIED. THE PREDOMINANT  
NON-GRAVITATIONAL FORCE IS THAT OF SUNLIGHT WHOSE  
EFFECTS MAY BE QUITE VARIED DEPENDING ON THE SHAPE,  
ORIENTATION, AND CONSTITUTION OF A DUST PARTICLE.  
FAR FROM THE EARTH THE ONLY OTHER FORCE THAT MAY BE  
OF SIGNIFICANCE IS THE LORENTZ FORCE, WHEREAS NEAR  
THE EARTH ALL THE USUAL FORCES INCLUDED IN ANALYZING  
SATELLITE ORBITS BECOME IMPORTANT. COMBINATIONS OF  
FORCES THAT MAY CONTRIBUTE SUBSTANTIALLY TO A  
CONCENTRATION OF SUCH DUST AROUND THE EARTH ARE ALSO  
ANALYZED. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 652 259 6/19 6/5  
ARMY MEDICAL RESEARCH LAB FORT KNOX KY

REPORT ON RESULTS OF DESERT FIELD STUDY, (U)

OCT 42 6P BEAN, WILLIAM B. ;  
PROJ: 2-8

UNCLASSIFIED REPORT

DESCRIPTORS: (\*ACCLIMATIZATION, \*DESERT TESTS), (\*HEAT TOLERANCE, ACCLIMATIZATION), STRESS(PHYSIOLOGY), ENVIRONMENT, FATIGUE(PHYSIOLOGY), DEHYDRATION, EXPOSURE(PHYSIOLOGY), WATER, EXERCISE(PHYSIOLOGY), THIRST, INGESTION(PHYSIOLOGY), DUST, ADAPTATION(PHYSIOLOGY), SODIUM CHLORIDE, MILITARY MEDICINE, PERFORMANCE(HUMAN) (U)

THE EFFECTS OF DESERT HEAT ON TROOPS WERE STUDIED. OBSERVATIONS WERE MADE ON HEAT EXHAUSTION, DEHYDRATION, HEAT STROKE, WATER REQUIREMENTS AND EFFECT OF DUST ON PERSONNEL. CONCLUSIONS: CASUALTIES FROM THE HEAT DURING THE EARLY PERIOD OF ENTRY TO THE DESERT RESULTED LARGELY FROM LACK OF A PERIOD FOR ADAPTATION, AND EXCESSIVE MUSCULAR WORK DURING THE WORST HEAT OF THE DAY. CERTAIN CONDITIONS SUCH AS PREVIOUS SICKNESS, DISTURBED BOWEL HABITS, ALCOHOLIC INDULGENCE AND FAILURE OF PROPER USE OF WATER AND SALT WERE PREDISPOSING FACTORS. WHEN THEY WERE CORRECTED PARTICULARLY WITH REFERENCE TO REST PERIODS DURING HEAVY WORK; WATER AND SALT INDOCTRINATION, AND CAREFUL SUPERVISION OF THE MEN DURING ACTIVITY SO THAT EARLY CASES COULD BE RECOGNIZED AND TREATED, THE RESULTS WERE GOOD. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 654 990 4/2 8/7  
ATMOSPHERIC SCIENCES LAB WHITE SANDS MISSILE RANGE N  
MEX

A STUDY OF ATMOSPHERIC DUST, (U)

MAR 67 141P HOIDALE, G. B. SMITH, S.  
M. IRLANCO, A. J. BARBER, T. L. I  
PROJ: DA-1-P-620901-A-199  
TASK: 1-P-620901-A-19905  
MONITOR: ECOM 5067

UNCLASSIFIED REPORT

DESCRIPTORS: (\*DUST, \*AIR POLLUTION), (\*AEROSOLS, NEW  
MEXICO), INFRARED SPECTRA, QUARTZ, KAOLINITE, GYPSUM,  
CARBONATE MINERALS, PARTICLES, SOILS, SALTS, CALCITE,  
METEOROLOGICAL PHENOMENA, METEOROLOGICAL CHARTS, AIR  
MASS ANALYSIS, MEASUREMENT (U)  
IDENTIFIERS: WHITE SANDS MISSILE RANGE (U)

THIS REPORT DISCUSSES THE TECHNIQUES USED IN AND  
THE RESULTS OF AN INVESTIGATION OF THE MINERAL  
CONSTITUENCY OF THE DUST COMPONENT OF THE ATMOSPHERIC  
AEROSOL OVER WHITE SANDS MISSILE RANGE, NEW  
MEXICO, CONDUCTED FROM NOVEMBER 1964 TO AUGUST  
1965. THE EIGHTY-ONE ATMOSPHERIC DUST SAMPLES,  
TAKEN NEAR THE SURFACE DURING THIS PERIOD, WERE  
ANALYZED BY THE LIGHT MICROSCOPE TECHNIQUE OF  
DISPERSION STAINING AND BY INFRARED ABSORPTION  
SPECTROSCOPY. DISPERSION STAINING WAS USED TO  
DETERMINE THE CONCENTRATIONS OF QUARTZ, KAOLINITE,  
ILLITE, GYPSUM, AND THE CARBONATE FAMILY WHEN THE  
PARTICLE DIAMETERS WERE GREATER THAN FOUR MICRONS.  
CASES OF EXCEPTIONALLY HIGH CONCENTRATIONS OF  
GYPSUM, QUARTZ, AND KAOLINITE, THE MONTH-BY-MONTH  
VARIATION OF THE COMPOSITE CONCENTRATION, THE  
SEASONAL VARIATION OF THE GYPSUM CONCENTRATION, AND  
THE LOWEST SINGLE-SAMPLE COMPOSITE CONCENTRATION ARE  
DISCUSSED IN RELATION TO THE MINERAL CONTENT OF AREA  
SOILS AND METEOROLOGICAL CONDITIONS. COMMENTS ARE  
MADE RELATIVE TO THE POSSIBLE INFLUENCE OF  
EXTRATERRESTRIAL AND SEA-SALT PARTICLES ON THE  
OBSERVED CONCENTRATIONS. BY EXTENDING INFRARED  
ABSORPTION SPECTRA TO 40 MICRONS WAVELENGTH, IT HAS  
BEEN POSSIBLE TO IDENTIFY THE MINERALS GYPSUM,  
MIRABILITE, QUARTZ, KAOLINITE, ILLITE, CALCITE, AND  
DOLOMITE IN MICROGRAM SAMPLES OF ATMOSPHERIC DUST,  
ALTHOUGH ANY PARTICULAR SAMPLE MIGHT REVEAL ONLY A  
FEW OF THESE CONSTITUENTS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 655 571 6/17  
ARMY MEDICAL RESEARCH LAB FORT KNOX KY

TEST OF EXPENDABLE DUST RESPIRATOR, E5. (U)

JAN 45 6P  
PROJ: T-3

UNCLASSIFIED REPORT

DESCRIPTORS: (\*PROTECTIVE MASKS, EFFICIENCY),  
ACCEPTABILITY, DUST, MILITARY PERSONNEL, EFFECTIVENESS,  
RESPIRATORS (U)

PRELIMINARY TESTS INDICATE THAT THE EXPENDABLE  
RESPIRATOR E5, PROVIDES ADEQUATE PROTECTION AGAINST  
NUISANCE DUSTS WITH NO GREATER RESISTANCE TO  
BREATHING THAN IS EXPECTED OF ANY PRACTICAL  
RESPIRATOR. LIMITED OBSERVATIONS DURING USE  
INDICATE THAT THE RESPIRATOR IS REASONABLY  
COMFORTABLE AND THAT ITS DUST-REMOVING EFFICIENCY IS  
ADEQUATE TO ELIMINATE ALL IRRITATION AND DISCOMFORT  
ASSOCIATED WITH BREATHING DUST-LADEN AIR.  
(AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 658 546 4/1

MINNESOTA UNIV MINNEAPOLIS SCHOOL OF PHYSICS AND  
ASTRONOMY

SIMULTANEOUS DUST AND OZONE SOUNDINGS OVER NORTH AND  
CENTRAL AMERICA. (U)

DESCRIPTIVE NOTE: ATMOSPHERIC PHYSICS.

AUG 67 223P ROSEN, JAMES M. ;  
REPT. NO. AP-25  
CONTRACT: NONR-710(22)

UNCLASSIFIED REPORT

DESCRIPTORS: (\*OZONE, STRATOSPHERE), (\*DUST,  
STRATOSPHERE), (\*ATMOSPHERIC SOUNDING, \*STRATOSPHERE),  
TROPopause, SAMPLING, NORTH AMERICA, CENTRAL AMERICA,  
TRANSPORT PROPERTIES, ATMOSPHERE MODELS, OZONE, PARTICLE  
SIZE (U)

SIMULTANEOUS SOUNDINGS OF OZONE AND SUB-MICRON DUST  
OVER NORTH AND CENTRAL AMERICA ARE REPORTED.  
THE RESULTS SHOW CONSIDERABLY MORE DUST IN THE  
EQUATORIAL STRATOSPHERE THAN IN THE MIDDLE LATITUDE  
STRATOSPHERE. THE RELATIVE MAXIMUM IN THE DUST  
CONCENTRATION OBSERVED NEAR THE LEVEL OF THE TROPICAL  
TROPopause AND AS FAR NORTH AS 60 DEGREE IS  
ATTRIBUTED TO AN EQUATORIAL DUST SOURCE. THE  
OCCASIONAL APPEARANCE OF A SECONDARY DUST MAXIMUM  
IMMEDIATELY ABOVE THE MID-LATITUDE TROPopause IS  
ATTRIBUTED TO A FORM OF TRANSPORT OTHER THAN THAT OF  
EDDY DIFFUSION. THE STRUCTURE IN THE OZONE AND  
DUST PROFILES APPEARS TO BE HIGHLY CORRELATED IN THE  
LOWER MID-LATITUDE STRATOSPHERE. A QUANTITATIVE  
MODEL IS PRESENTED DESCRIBING THE PRODUCTION AND  
TRANSPORT OF DUST IN THE STRATOSPHERE. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 658 552 13/12 19/3  
ARMY MEDICAL RESEARCH LAB FORT KNOX KY

DETERMINATION OF BASIC VENTILATION CHARACTERISTICS OF  
TANKS OF THE M4 SERIES. DETERMINATION OF BASIC  
VENTILATION CHARACTERISTICS OF TANKS OF THE M5  
SERIES. (U)

DESCRIPTIVE NOTE: REPT. NO. 1,  
APR 43 21P HATCH, THEODORE F. ; WALPOLE,  
ROBERT H. ;  
PROJ: 3-4, 3-6

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPT. ON PROJ. 'TOXIC GASES IN  
ARMORED VEHICLES'.

DESCRIPTORS: (\*TANKS(COMBAT VEHICLES), \*EXHAUST GASES),  
(\*VENTILATION, TANKS(COMBAT VEHICLES)), HEAT, SAFETY,  
EFFICIENCY, AIR POLLUTION, PROTECTION, CHEMICAL WARFARE  
AGENTS, PRESSURE, DUST, TOXIC TOLERANCES (U)

THE PURPOSE OF THE REPORT IS TO DETERMINE THE BASIC  
CHARACTERISTICS AND LIMITATIONS OF THE SYSTEM OF CREW  
COMPARTMENT VENTILATION EMPLOYED AT THE PRESENT TIME  
IN THE M4 AND M5 TANKS AS RELATED TO THE  
PROTECTION PROVIDED TO THE CREW MEMBERS. THE  
PURPOSE OF VENTILATION OF THE FIGHTING COMPARTMENT IN  
A TANK IS TO INSURE, AS FAR AS POSSIBLE, A REASONABLY  
SAFE ATMOSPHERIC ENVIRONMENT AND ONE IN WHICH THE  
EFFICIENCY OF THE CREW WILL NOT BE SERIOUSLY  
IMPAIRED. THE MOST IMPORTANT FUNCTIONS OF CREW  
COMPARTMENT VENTILATION ARE: CONTROL OF GUN FUMES;  
REMOVAL OF EXCESS HEAT; EFFECTIVE HEATING OF CREW IN  
COLD WEATHER; CONTROL OF DUST; PROTECTION AGAINST  
CHEMICAL WARFARE AGENTS. CREW COMPARTMENT  
VENTILATION IN THE M4 AND M5 TANKS IS PROVIDED AS  
A BY-PRODUCT OF THE ENGINE VENTILATION AND IS NOT  
SUBJECT TO INDEPENDENT CONTROL. THIS SYSTEM OF  
NEGATIVE-PRESSURE VENTILATION IS WHOLLY INCAPABLE OF  
MEETING CERTAIN OF THE DESIRED FUNCTIONS OF CREW  
COMPARTMENT VENTILATION AND MEETS THE OTHERS ONLY IN  
PART. A COMPLETE DISCUSSION OF THE CHARACTERISTICS  
AND LIMITATIONS OF VENTILATION IN THE M4 AND M5  
TANKS IS PRESENTED. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 658 687 6/5 13/2  
YODOGAWA CHRISTIAN HOSPITAL OSAKA (JAPAN)

AIR POLLUTION ASTHMA IN OSAKA, JAPAN.

(U)

DESCRIPTIVE NOTE: FINAL REPT. 15 DEC 65-14 JUN 67,  
JUN 67 63P BUSH, OVID B. , JR;  
CONTRACT: DA-92-557-FEC-37767  
PROJ: DA-3A025601A827  
TASK: 3A025601A827-00-046FE  
MONITOR: ARDG(FE) J-222-4

UNCLASSIFIED REPORT

DESCRIPTORS: (\*ALLERGIC DISEASES, \*AIR POLLUTION),  
RESPIRATORY DISEASES, MEDICAL EXAMINATION, PUBLIC  
HEALTH, STATISTICAL ANALYSIS, PLANTS(BOTANY), PERIODIC  
VARIATIONS, TABLES(DATA), PARTICLES, SULFUR COMPOUNDS,  
DIOXIDES, JAPAN (U)

TWO PROBLEMS WERE STUDIED: (1) WAS THE SYNDROME OF 'TOKYO-YOKOHAMA ASTHMA' A SEPARATE AND DISTINCT SYNDROME OR WAS IT A GROUP OF THREE CLINICAL ENTITIES (TRUE ASTHMA, ACUTE BRONCHITIS, CHRONIC OBSTRUCTIVE PULMONARY DISEASE); (2) COULD THE SYNDROME OF 'TOKYO-YOKOHAMA ASTHMA' BE FOUND IN OSAKA AS WELL AS IN THE TOKYO-YOKOHAMA AREA. 146 PATIENTS WERE STUDIED AND COMPLETE RECORDS WERE KEPT ON 124. A STANDARDIZED QUESTIONNAIRE, PHYSICAL EXAMINATION, LABORATORY TESTS, AND SPIROMETRIC STUDIES, AS WELL AS THE USE OF AIR CONDITIONERS AND ELECTROSTATIC PRECIPITATORS FOR CLEAN AIR ROOMS WERE USED TO EVALUATE THESE PROBLEMS. SO2 AND PARTICULATE LEVELS WERE MEASURED. CASES OF EACH OF THE THREE CLINICAL ENTITIES MENTIONED ABOVE WERE FOUND. THE PATIENTS RESPONDED TO THE CLEAN AIR ENVIRONMENT, BUT UPON RETURN TO THEIR HOMES SOME HAVE AGAIN HAD RESPIRATORY DIFFICULTIES. THE SYNDROME OF 'TOKYO-YOKOHAMA ASTHMA,' THEREFORE, IS IN REALITY THREE DISTINCT CLINICAL ENTITIES AND NOT A SINGLE SYNDROME. THE CLINICAL ENTITIES DESCRIBED ABOVE DO OCCUR IN THE OSAKA AREA AND IT IS SUSPECTED THAT THEY WOULD OCCUR IN ANY AREA WHERE THERE IS A HIGH LEVEL OF AIR POLLUTION AND DURING SEASONS WHEN THERE IS A LARGE NUMBER OF RESPIRATORY ILLNESSES. IT IS BELIEVED THAT THERE IS A CONNECTION BETWEEN AIR POLLUTION AND THE SEVERITY AND COMPLICATIONS OF RESPIRATORY ILLNESSES.  
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 659 384 6/6 6/18 8/7  
STANFORD RESEARCH INST MENLO PARK CALIF

OPERATION CENIZA-ARENA: THE RETENTION OF FALLOUT  
PARTICLES FROM VOLCAN IRAZU (COSTA RICA) BY PLANTS  
AND PEOPLE. PART TWO, (U)

DEC 66 257P MILLER, CARL F. I  
PROJ: SRI-MII-4890

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO PT. I, AD-637 313 AND  
SEE ALSO AD-659 385.

DESCRIPTORS: (\*FALLOUT, MODELS(SIMULATIONS)),  
(\*VOLCANOES, DEPOSITS), AIR POLLUTION, COSTA RICA,  
METEOROLOGY, MASS TRANSFER, PARTICLES, TEST METHODS,  
HUMANS, PLANTS(BOTANY), CONTAMINATION, WIND, RAIN,  
DISTRIBUTION (U)

IDENTIFIERS: CENIZA ARENA OPERATION (U)

THIS REPORT SUMMARIZES THE FOLIAR CONTAMINATION  
DATA OBTAINED IN THE SECOND PHASE OF OPERATION  
CENIZA-ARENA IN COSTA RICA, CENTRAL  
AMERICA. MEASUREMENTS WERE MADE OF THE RETENTION  
OF AIRBORNE PARTICLES (EJECTED BY VOLCAN  
IRAZU) BY THE FOLIAGE OF THIRTEEN DIFFERENT  
VEGETABLE PLANTS (INCLUDING CORN), FOUR DIFFERENT  
CEREAL GRAINS, AND SIX DIFFERENT KINDS OF TREES.  
DATA WERE OBTAINED ON BOTH THE INITIAL  
CONTAMINATION OF THE FOLIAGE AND THE REDUCTION IN  
CONTAMINATION LEVELS BY WIND AND RAIN. THE CROPS  
WERE GROWN AT TWO LAND PLOTS. ADDITIONAL  
MEASUREMENTS INCLUDED SURFACE AIR TEMPERATURES,  
HUMIDITY, WIND SPEED, PARTICLE SIZE DISTRIBUTIONS,  
PROJECTED AREAS OF LEAVES AND OTHER PLANT PARTS,  
PLANTING DENSITY, COMPOSITION AND DENSITY OF THE  
PARTICLES, SOLUBLE SALT CONTENT OF THE PARTICLES,  
CONTAMINATION OF PERSONS, AND PARTICLE FALL  
TRAJECTORIES. DEPENDING ON METEOROLOGICAL  
CONDITIONS AND PLANTING DENSITY, THE FRACTION OF THE  
PARTICLES INITIALLY RETAINED BY THE FOLIAGE WAS FOUND  
TO VARY FROM ALMOST NIL TO 100 PERCENT. ALL PLANTS  
RETAINED AT LEAST SOME OF ALL THE AIRBORNE PARTICLES  
THAT ARRIVED AT THE LAND PLOTS, INCLUDING THE  
LARGEST. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 659 385 6/6 6/18 8/7  
STANFORD RESEARCH INST MENLO PARK CALIF

OPERATION CENIZA-ARENA: THE RETENTION OF FALLOUT  
PARTICLES FROM VOLCAN IRAZU (COSTA RICA) BY PLANTS  
AND PEOPLE. PART II. APPENDICES, (U)

DEC 66 299P MILLER, CARL F. ;  
PROJ: SRI-MU-4890

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-659 384.

DESCRIPTORS: (\*FALLOUT, MODELS(SIMULATIONS)),  
(\*VOLCANOES, DEPOSITS), AIR POLLUTION, COSTA RICA,  
METEOROLOGY, MASS TRANSFER, PARTICLES, TEST METHODS,  
HUMANS, PLANTS(BOTANY), CONTAMINATION, WIND, RAIN,  
DISTRIBUTION (U)

IDENTIFIERS: CENIZA ARENA OPERATION (U)

CONTENTS: SUMMARY OF HOURLY DEPOSIT RATES OF  
CENIZA-ARENA DEPOSITS AT THE TWO LAND PLOTS AND  
ERUPTIVE BEHAVIOR OF VOLCAN IRAZU; SUMMARY OF  
METEOROLOGICAL MEASUREMENTS AND DATA; SUMMARY OF  
FOLIAR SAMPLING AND RELATED INFORMATION; EXCERPTS  
FROM TRIP ITINERARY AND GENERAL OBSERVATIONS, JUNE  
14, 1964 THROUGH FEBRUARY 23, 1965; CENIZA-ARENA  
SIEVE ANALYSIS MEASUREMENTS; FOLIAR SPECIFIC AREAS  
AND PLANT GEOMETRY. (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 660 973 4/2 13/2  
WEATHER BUREAU WASHINGTON D C

ON THE PROPAGATION OF SMOKE FROM FACTORY STACKS, (U)

JAN 61 16P GANDIN, L. S. ; SOLOVEICHIK,  
R. E. ;  
MONITOR: TT 61-23078

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SPONSORED BY ARMY ELECTRONIC  
PROVING GROUND, FORT HUACHUCA, ARIZ. TRANS. OF  
GLAVNAYA GEOFIZICHESKAYA OBSERVATORIYA, LENINGRAD.  
TRUDY (USSR) N77(139) P84-94 1958.

DESCRIPTORS: (\*AIR POLLUTION, AEROSOLS); (\*FACTORIES,  
AIR POLLUTION), DIFFUSION, TURBULENCE, WIND, PARTICLES,  
MATHEMATICAL ANALYSIS, METEOROLOGICAL PHENOMENA, USSR(U)

THE REPORT DESCRIBES A THEORETICAL ANALYSIS OF  
SMOKE PROPAGATION FROM FACTORY STACKS TO HELP MAKE IT  
POSSIBLE TO PREDICT THE DEGREE OF AIR POLLUTION BY  
SMOKE IN AN AREA, WITH SPECIFIC CHARACTERISTICS OF  
THE STACKS AND SMOKE WHICH IS EJECTED INTO THE  
ATMOSPHERE, AND UNDER CERTAIN METEOROLOGICAL  
CONDITIONS. BY KNOWING THE LATTER, IT IS POSSIBLE,  
ON THE BASIS OF A THEORETICAL ANALYSIS, TO DETERMINE  
SUCH CHARACTERISTICS OF STACKS AND SMOKE WITH WHICH  
THE SMOKE CONCENTRATION DOES NOT EXCEED THE LIMITS OF  
CERTAIN ESTABLISHED NORMS. (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 663 800 13/2 7/4  
STANFORD RESEARCH INST MENLO PARK CALIF

THE IMPACTION OF AIRBORNE PARTICLES ON PLATE  
COLLECTORS, (U)

APR 67 64P MILLER, CARL F. ;  
CONTRACT: N00028-67-C-1143  
PROJ: SRI-MU-6358

UNCLASSIFIED REPORT

DESCRIPTORS: (\*PARTICLES, \*AIR POLLUTION), AIRBORNE,  
VOLCANOES, EXPLOSIONS, METAL PLATES, COLLECTING METHODS,  
MATHEMATICAL ANALYSIS, PARTICLE SIZE, WEIGHT, DEPOSITS,  
DUST, IMPACT, THEORY, VELOCITY, WIND, GRAVITY (U)

IMPACTION DATA FOR A PLATE COLLECTOR EXPOSED TO  
FALLING PARTICLES THAT WERE PRODUCED BY EXPLOSIVE  
ERUPTIONS OF VOLCANO IRAZU WERE CORRELATED, AND  
APPROXIMATING FUNCTIONS FOR REPRESENTING THE  
IMPACTION COEFFICIENTS OF THE PLATES WERE DERIVED  
FROM THE DATA. THE ARRANGEMENT OF THE PLATES AT 0  
(180), 30, 60, 90, 120, AND 150 DEGREES FROM THE  
HORIZONTAL PROVIDED FOUR CLASSES OF IMPACTION  
GEOMETRIES. AN APPROXIMATE RELATIONSHIP BETWEEN  
THE IMPACTION OR COLLECTING EFFICIENCY OF THE PLATES  
AND THE TRAY COLLECTOR (OR THE GROUND SURFACE)  
WAS ALSO DERIVED. THE PLATE COLLECTOR DATA WERE  
USED TO ESTIMATE THE EFFECTIVE AVERAGE DIAMETER OF  
THE FALLING PARTICLES, AND, WITH A FEW EXCEPTIONS,  
THIS DIAMETER WAS ALWAYS GREATER THAN THE MASS MEDIAN  
DIAMETER DETERMINED FROM SIEVE ANALYSIS OF THE  
PARTICLES. THUS IT WAS CONCLUDED THAT, IN THE  
MAJORITY OF THE PARTICLE SHOWERS, THE PARTICLES FELL  
AND IMPACTED AS AGGLOMERATES OF MANY SMALLER  
PARTICLES. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 665 439 15/3 13/2  
SOUTHWEST RESEARCH INST SAN ANTONIO TEX DEPT OF AUTOMOTIVE  
RESEARCH

CHARACTERISTICS OF THE DUST ENVIRONMENT IN THE  
VICINITY OF MILITARY ACTIVITIES. (U)

DESCRIPTIVE NOTE: FINAL REPT.,  
JAN 68 57P ENGELHARDT, ROBERT E. ;  
KNEBEL, GEORGE W. ;  
REPT. NO. SWRI-AR-642  
CONTRACT: DA-44-009-AMC-1009(T)  
PROJ: DA-1A025001A622

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MILITARY FACILITIES, DESERTS), (\*DUST,  
MEASUREMENT), PARTICLE SIZE, ARMY EQUIPMENT, VISIBILITY,  
DENSITY, TURBULENCE, AIR POLLUTION, VEHICLES, WIND,  
DISTRIBUTION (U)

MEASUREMENT OF THE DUST ENVIRONMENT WAS CONDUCTED  
AT FIVE MILITARY INSTALLATIONS IN THE SOUTHWESTERN  
UNITED STATES. THE PURPOSE OF THESE  
MEASUREMENTS WAS TO ESTABLISH THE IMPORTANT  
CHARACTERISTICS OF THE DUST CLOUDS WHICH WOULD BE  
EXPERIENCED BY STATIONARY EQUIPMENT IN THE VICINITY  
OF VARIOUS TYPES OF MILITARY ACTIVITY. THE MAIN  
EMPHASIS WAS PLACED ON VEHICULAR CREATED DUST CLOUDS  
ALTHOUGH SOME DATA WERE GATHERED FROM OTHER DUST  
PRODUCING SITUATIONS. THE RESULTS SHOWED A VERY  
WIDE VARIATION INDICATIVE THAT MANY FACTORS CAN AND  
DO INFLUENCE THE DUST ENVIRONMENT. THE DATA WERE  
SUFFICIENT AND SUPPORT SEVERAL BROAD GENERALIZATIONS  
REGARDING SOME EFFECTS ON CLOUD DURATION VISIBILITY  
AND CONCENTRATION. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 667 167 13/2

SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

TALC IN ATMOSPHERIC DUSTS,

(U)

MAR 68

5P

WINDOM, H. ; GRIFFIN, J. ;

GOLDREGER, E. D. ;

CONTRACT: NONR-2216(23)

UNCLASSIFIED REPORT

AVAILABILITY: PUBLISHED IN ENVIRONMENTAL SCIENCE  
AND TECHNOLOGY, V1 P923-6 NOV 1967.

DESCRIPTORS: (\*AIR POLLUTION, \*TALC), SAMPLING, DUST,  
RAIN, SNOW, PESTICIDES, X RAY DIFFRACTION, SOLIDS,  
PARTICLE SIZE, GLACIERS, DISTRIBUTION, AGRICULTURE (U)

THE MINERAL TALC HAS BEEN OBSERVED IN DUSTS  
RECOVERED DIRECTLY FROM THE ATMOSPHERE AND IN THE  
SOLID MINERAL PHASES OF RAIN AND SNOW. THE TALC,  
WHERE DETECTED, ATTAINS LEVELS OF THE ORDER OF A PER  
CENT BY WEIGHT IN THE SOLID PHASES. THIS TALC  
PROBABLY ARISES FROM AGRICULTURAL ACTIVITY WHERE THE  
MINERAL IS USED AS A CARRIER AND DILUENT FOR  
PESTICIDES. THE AMOUNTS OF TALC FOUND IN  
ATMOSPHERIC DUSTS APPEAR TO REFLECT A LOCAL  
INTRODUCTION RATHER THAN A GENERALIZED GLOBAL  
FALLOUT. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 667 557 21/5 1/3 13/2  
AEROSPACE RESEARCH LABS WRIGHT-PATTERSON AFB OHIO  
MICROSCOPIC PARTICLE SEPARATION AND APPLICATIONS,

(U)

FEB 68 80P POPLAWSKI, ROBERT ; MILLER,  
ROGER A. ;  
REPT. NO. ARL-68-0024  
PROJ: AF-7116  
TASK: 711600

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED FOR PRESENTATION AT THE  
MEETING ON HELICOPTER PROPULSION SYSTEMS, SPONSORED BY  
THE AGARD PROPULSION AND ENERGETICS PANEL, OTTAWA,  
CANADA, 10-4 JUN 68.

DESCRIPTORS: (\*GAS TURBINES, INGESTION(ENGINES)),  
(\*AIRCRAFT ENGINES, \*INGESTION(ENGINES)), (\*AIR  
POLLUTION, SEPARATION), DUST, PARTICLES, ENGINE AIR  
SYSTEMS COMPONENTS, SEA WATER, ENVIRONMENTAL TESTS,  
DESIGN, TEST METHODS, SALT SPRAY TESTS, TRANSPORT  
AIRCRAFT, HELICOPTERS, VERTICAL TAKEOFF AIRCRAFT,  
AVIATION SAFETY

(U)

IDENTIFIERS: \*PARTICLE SEPARATION, SEPARATORS,  
TRADEOFFS

(U)

THE APPLICATION OF ULTRA-MICROSCOPIC PARTICLE  
SEPARATION STUDIES RANGES FROM THE PROTECTION OF  
TURBINE ENGINES FROM DUST AND/OR SEA SPRAY TO  
APPLICATIONS IN THE FIELD OF AIR POLLUTION. THE  
PAPER PRESENTS NOT ONLY THE THEORY OF THESE DEVICES  
AND LABORATORY EXPERIMENTAL RESULTS, BUT ALSO FIELD  
TESTING RESULTS ON SELECTED UNITS. THE IMPORTANT  
TRADE-OFFS BETWEEN DESIGN PARAMETERS AND THE  
SELECTION PROCESSES REQUIRED TO TAILOR A DUST  
SEPARATOR TO A SPECIFIC APPLICATION ARE DISCUSSED AND  
OTHER IMPORTANT AREAS OF APPLICATION ARE SUGGESTED.  
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 673 017 6/3  
ARMY BIOLOGICAL LABS FREDERICK MD

A STUDY OF THE MICROORGANISMS IN THE AIR OF  
LENINGRAD,

(U)

JUL 68 7P ADAMOVA, A. A. ; KRIVETSKAYA,  
M. A. ;  
REPT. NO. TRANS-478

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF SOVETSKII VRACHEBNIY  
ZHURNAL (USSR) V43 N17 P899-904 1939, BY ELTON E.  
EWING.

DESCRIPTORS: (\*AEROBIOLOGY, USSR), BIOLOGICAL  
CONTAMINATION, AEROSOLS, DUST, RURAL AREAS, BACTERIA,  
URBAN AREAS, MOLDS (ORGANISMS), SOILS, SNOW, WIND, AIR  
POLLUTION (U)  
IDENTIFIERS: TRANSLATIONS (U)

THIS REPORT DESCRIBES THE NUMBER AND CHARACTER OF  
THE MICROORGANISMS IN THE AIR OF LENINGRAD, IN ITS  
DIFFERENT DISTRICTS: IN THE DUSTIER DISTRICTS NEAR  
FABRIKES AND TRAIN STATIONS AND IN THE LEAST DUSTY  
DISTRICTS IN A ZONE OF VEGETATION, AND FOR  
COMPARISON, WITHIN THE INSTALLATIONS. THE WORK WAS  
DONE IN 1938. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 673 212 13/2

WISCONSIN UNIV MADISON DEPT OF METEOROLOGY

MEASUREMENT OF ATMOSPHERIC AEROSOLS AND INFRARED  
RADIATION OVER NORTHWEST INDIA AND THEIR  
RELATIONSHIP. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,  
JAN 68 177P PETERSON, JAMES T. ;  
REPT. NO. TR-38  
CONTRACT: NONR-1202(07), NSF-GP-5572  
PROJ: NR-387-022

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AIR POLLUTION, INDIA), (\*AEROSOLS,  
INFRARED RADIATION), PARTICLES, DUST, CLIMATE,  
DISTRIBUTION, PARTICLE SIZE, SOLAR RADIATION,  
RADIOMETERS, AIRBORNE, METEOROLOGICAL BALLOONS,  
AIRCRAFT, MINERALS, TROPOSPHERE, SCATTERING, ABSORPTION,  
MEASUREMENT (U)  
IDENTIFIERS: MONSOONS (U)

THE EXISTENCE OF LARGE CONCENTRATIONS OF  
ATMOSPHERIC AEROSOLS OVER NORTHWEST INDIA,  
ESPECIALLY DURING THE PRE-MONSOON SEASON, HAS BEEN  
NOTED BY SEVERAL SOURCES. AN ANNUAL DISTRIBUTION  
OF AEROSOLS AT DELHI HAS BEEN TABULATED BY SEKHON  
AND MURTY (1966). FINALLY, RAGHAVAN AND  
YADAV (1966) STUDIED THE INFLUENCE OF  
ATMOSPHERIC PARTICULATES ON SOLAR RADIATION, OR  
TURBIDITY, AT NEW DELHI FOR SEVERAL YEARS DURING  
THE PRE-MONSOON SEASON. IN GENERAL, THESE REPORTS  
INDICATE THAT LARGE QUANTITIES OF PARTICULATES ARE  
PRESENT IN THE ATMOSPHERE IN NORTHWEST INDIA, WITH  
THE HIGHEST CONCENTRATIONS DURING THE PRE-MONSOON  
SEASON, AND THAT THESE AEROSOLS DO INFLUENCE THE  
RADIATION OF THE AREA. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 674 282 4/2

FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

THERMOANEMOMETER (THERMOANEMOMETER),

(U)

NOV 67 5P BASS, V. V. ; MELAMED, I.

S. ; POGIBKO, M. G. ;

REPT. NO. FTD-HT-23-1121-67

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF PATENT (USSR) 172  
141 2P, 1 JUN 64, BY F. DION.

DESCRIPTORS: (\*ANEMOMETERS, USSR), THERMISTORS,  
DETECTORS, DUST, AIR MASS ANALYSIS, VELOCITY,  
TURBULENCE, MEASUREMENT

(U)

IDENTIFIERS: \*THERMOANEMOMETERS, TRANSLATIONS

(U)

THE REPORT PRESENTS A THERMOANEMOMETER CONTAINING A  
PROTECTIVE CASING AND A SENSITIVE ELEMENT IN THE FORM  
OF A THERMISTOR CONNECTED INTO THE MEASURING BRIDGE  
CIRCUIT. TO MAKE THE THERMOANEMOMETER USABLE FOR  
TAKING LONG-TIME MEASUREMENTS IN DUST-BEARING  
CURRENTS, THE SENSITIVE ELEMENT IS PLACED IN A  
TURBULENT CURRENT PRODUCED BY THE PROTECTIVE CASING  
MADE IN A SHAPE OF, FOR INSTANCE, A GLASS MOUNTED IN  
THE INVESTIGATED CURRENT, WITH ITS OPEN SIDE PARALLEL  
TO THE DIRECTION OF THIS CURRENT. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 674 629 7/4 4/1

ALLIED RESEARCH ASSOCIATES INC CONCORD MASS

RELATION OF AEROSOLS TO ATMOSPHERIC FEATURES. (U)

DESCRIPTIVE NOTE: FINAL REPT. 1 MAY 67-15 SEP 68,  
SEP 68 29P CHANG, DAVID T. WEXLER,  
RAYMOND ;

REPT. NO. APA-9646-F

CONTRACT: F19628-67-C-0287

PROJ: AF-7670

TASK: 767004

MONITOR: AFCRL 68-0360

UNCLASSIFIED REPORT

DESCRIPTORS: (\*ATMOSPHERIC MOTION, AEROSOLS),  
(\*AEROSOLS, DISTRIBUTION), STRATOSPHERE, AIR MASS  
ANALYSIS, SAMPLING, ATTENUATION, SURFACE PROPERTIES,  
CONVECTION(ATMOSPHERIC), TROPICAL REGIONS, DUST,  
ATMOSPHERIC TEMPERATURE, TROPOPAUSE, NEW MEXICO,  
PERIODIC VARIATIONS (U)  
IDENTIFIERS: GRAPHS(CHARTS) (U)

RELATIONSHIPS BETWEEN AEROSOL ATTENUATION  
COEFFICIENT PROFILES AT WHITE SANDS, NEW  
MEXICO, AND ATMOSPHERIC FEATURES WERE INVESTIGATED.  
THE DEPENDENCE OF LOWER STRATOSPHERIC AEROSOL  
CONTENT ON AIR MASS CHARACTERISTICS AND THE  
CORRELATION BETWEEN THE HEIGHT OF THE LOWER  
STRATOSPHERIC AEROSOL LAYER AND THE HEIGHT OF THE  
TROPICAL TROPOPAUSE SUGGESTS A TROPICAL SOURCE FOR  
THESE AEROSOLS. SEASONAL VARIATIONS IN AEROSOL  
CONTENT OF THE SURFACE LAYER WERE FOUND TO REFLECT  
SEASONAL CHANGES IN CONVECTIVE ACTIVITY IN THIS  
LAYER. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 674 644 1/3 1/2  
DYNASCIENCES CORP BLUE BELL PA

INVESTIGATION OF THE DOWNWASH ENVIRONMENT GENERATED  
BY V/STOL AIRCRAFT OPERATING IN GROUND EFFECT. (U)

DESCRIPTIVE NOTE: FINAL REPT.,  
JUL 68 149P GEORGE, M. ; KISIELOWSKI, F. ;  
DOUGLAS, D. S. ;  
REPT. NO. DCR-275  
CONTRACT: DA-44-177-AMC-316(T)  
PROJ: DA-1-T-021701-A-047  
MONITOR: USAAVLABS TR-68-52

UNCLASSIFIED REPORT

DESCRIPTORS: (\*HELICOPTERS, DOWNWASH), (\*VERTICAL  
TAKEOFF AIRCRAFT, DOWNWASH), (\*AIR POLLUTION, HOVERING),  
GROUND EFFECT, DUST, MATHEMATICAL MODELS, TRANSPORT  
AIRCRAFT, RESEARCH PLANES, VISIBILITY, MASS TRANSFER,  
FLOW FIELDS (U)

IDENTIFIERS: C-142 AIRCRAFT, H-21 AIRCRAFT, V-5  
AIRCRAFT, XC-142 AIRCRAFT, X-19 AIRCRAFT, X-22A  
AIRCRAFT, X-22 AIRCRAFT, XV-5A AIRCRAFT (U)

ANALYTICAL METHODS ARE DEVELOPED FOR DETERMINING  
THE DOWNWASH ENVIRONMENT GENERATED BY MULTIROTOR/  
PROPELLER V/STOL AIRCRAFT CONFIGURATIONS  
OPERATING IN GROUND PROXIMITY. THESE METHODS ARE  
UTILIZED TO COMPUTE ROTOR FLOW FIELD AND CONTAMINANT  
DUST CLOUD CHARACTERISTICS (INCLUDING PARTICLE  
DENSITY AND SIZE DISTRIBUTIONS) FOR THE H-21,  
XC-142, X-22A, X-19A, AND XV-5A  
AIRCRAFT. THE EFFECTS OF THE CONTAMINATED  
ATMOSPHERE ON PILOT'S VISIBILITY, GROUND EQUIPMENT,  
AND PERSONNEL ARE ALSO DETERMINED FOR THESE AIRCRAFT.  
THE THEORETICALLY PREDICTED RESULTS ARE GENERALLY  
IN GOOD AGREEMENT WITH THE LIMITED TEST DATA.  
ADDITIONAL FULL-SCALE TEST DATA ARE REQUIRED TO  
VERIFY FURTHER THE ASSUMPTIONS INHERENT IN THE  
THEORY. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 677 727 19/1  
BUREAU OF MINES WASHINGTON D C

RESEARCH AND TECHNOLOGIC WORK ON EXPLOSIVES,  
EXPLOSIONS, AND FLAMES: FISCAL YEAR 1967. (U)

DESCRIPTIVE NOTE: INFORMATION CIRCULAR.

AUG 68 28P

REPT. NO. BM-IC-8387

UNCLASSIFIED REPORT

DESCRIPTORS: (\*EXPLOSIVES, BIBLIOGRAPHIES), DETONATIONS,  
COAL, DUST, FLAME PROPAGATION, EXPLOSIVE GASES, REACTION  
KINETICS, HYPERGOLIC IGNITION, AUTOIGNITION, UNDERGROUND  
EXPLOSIONS, HAZARDS, SAFETY, COMBUSTION PRODUCTS, AIR  
POLLUTION, INCENDIARY MIXTURES, SHOCK WAVES,  
SENSITIVITY, HYDROGEN PEROXIDE (U)

THE PRINCIPAL ACTIVITIES OF THE BUREAU OF MINES  
EXPLOSIVES RESEARCH CENTER DURING FISCAL YEAR  
1967 (JULY 1, 1966, TO JUNE 30, 1967) ARE  
REVIEWED IN PART 1. PART 2 PRESENTS SHORT  
ABSTRACTS OF THE PUBLICATIONS ISSUED DURING THIS  
PERIOD IN THE BUREAU SERIES AND IN OTHER MEDIA.  
PART 3 DESCRIBES A SHORT STUDY ON THE SHOCK  
INITIATION OF HYDROGEN PEROXIDE NOT DESTINED FOR  
PUBLICATION ELSEWHERE. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 679 740 4/1 13/2  
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

RESULTS OF MODEL EXPERIMENTS ON THE PROPAGATION OF A  
SETTLING ADMIXTURE IN THE LOWER LAYER OF THE  
ATMOSPHERE UNDER VARIOUS METEOROLOGICAL CONDITIONS.

(U)

JAN 68 16P BYZOVA, N. L. ; MAHKOVA, G.  
B. ; OSIPOV, YU. S. ;  
REPT. NO. FTD-MT-24-278-67

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED MACHINE TRANS. OF NAUCHNAYA  
KONFERENTSIYA PO YADERNOI METEOROLOGII, ORNINSK, 3-6  
FEB 64. RADIOAKTIVNYE IZOTOPY V ATMOSFERE I IKH  
ISPOLZOVANIE V METEOROLOGII, MOSCOW, 1965 P392-402.

DESCRIPTORS: (\*ATMOSPHERIC MOTION, WASTE GASES), (\*AIR  
POLLUTION, METEOROLOGICAL PHENOMENA),  
WASTES(INDUSTRIAL), PARTICLES, AEROSOLS, WIND,  
METEOROLOGICAL PHENOMENA, PERIODIC VARIATIONS,  
TEMPERATURE INVERSION, ACRYLIC RESINS, POWDERS,  
DISTRIBUTION, SEDIMENTATION, DENSITY, MEASUREMENT (U)  
IDENTIFIERS: LAYERS(ATMOSPHERE), SUMMER, TRANSLATIONS,  
WINTER (U)

FURTHER STUDY AND OBSERVATION ARE NEEDED TO MEASURE  
AND CALCULATE MORE SCIENTIFICALLY THE DISPERSAL OF  
GASSES AND SMOKE EMANATING FROM CHIMNEYS AND CARRIED  
BY AIR CURRENTS. THE INSTITUTE OF APPLIED  
GEOPHYSICS USED A 300 METER METEOROLOGICAL TOWER.  
VARIOUS HEIGHTS OF SOURCE WERE USED AND STICKY  
SURFACE PLANE TABLES WERE DEPLOYED IN A RADIUS OF 10-  
20 KM AROUND THE TOWER. PARTICLES DISPERSED FROM A  
CHIMNEY SOURCE ARE CARRIED BY THE WIND AND SETTLE  
UNDER INFLUENCE OF THEIR WEIGHT. INFORMATION  
OBTAINED THUS FAR HAS BEEN INSUFFICIENT TO PERMIT  
DERIVING A FORMULA FOR PRACTICAL CALCULATION OF  
CHIMNEY HEIGHTS FOR NEWLY CONSTRUCTED ENTERPRISES AND  
TO DETERMINE THE AREA OF CONTAMINATION. IN THE  
EXPERIMENTS, A POLYMETHYL-METHACRYLATE POWDER  
CONSISTING OF PARTICLES 10-100 MICRONS IN SIZE WAS  
USED AS THE CONTAMINANT. TESTS WERE CONDUCTED  
UNDER A VARIETY OF METEOROLOGICAL CONDITIONS BOTH IN  
SUMMER AND WINTER AND DURING DAY AND NIGHT. THE  
EFFECT OF TEMPERATURE INVERSIONS WAS FOUND TO HAVE A  
SIGNIFICANT EFFECT ON DISPERSAL. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 680 489 15/2 13/11 6/9  
ARMY BIOLOGICAL LABS FREDERICK MD

FILTRATION AS A METHOD OF REMOVING MICROBES FROM THE  
AIR, (U)

JUL 68 4P ZUYKOVA, E. YU. ;  
REPT. NO. TRANS-289

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF GIGIENA I SANITARIYA  
(USSR) V24 N6 P72-73 1959.

DESCRIPTORS: (\*AIR, DECONTAMINATION), (\*BACTERIA,  
REMOVAL), DECONTAMINATION KITS, GAS FILTERS, MEMBRANES,  
TEST METHODS, PARTICLE SIZE, DENSITY, BACTERIAL  
AEROSOLS, DUST, DROPS, USSR (U)

FILTRATION IS ONE OF THE SIMPLEST AND MOST  
PERSPECTIVE METHODS OF REMOVING MICROORGANISMS THAT  
ARE IN SUSPENSION IN THE AIR. AS A RESULT OF THE  
TESTS WHICH WERE CONDUCTED, IT WAS ESTABLISHED THAT  
THE FP TYPE AND THE MEMBRANE FILTERS POSSESS A HIGH  
FILTRATION CAPACITY IN REGARDS TO BACTERIAL AEROSOLS  
WHICH ARE EITHER IN THE DUST OR DROPLET STAGE. THE  
FILTERS OF THE FP TYPE FILTER AN AVERAGE OF  
99.998%, AND THE MEMBRANE FILTERS - 99.978% OF A  
BACTERIAL AEROSOL OF BACT. PRODIGIOSUM IN THE  
DROPLET PHASE. THE FP TYPE FILTERS ARE MORE  
CONVENIENT AND SIMPLER IN USE THAN THE MEMBRANE  
FILTERS AND CAN BE RECOMMENDED FOR AIR PURIFICATION  
FROM MICROORGANISMS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 682 557 6/3 6/13  
ARMY BIOLOGICAL LABS FREDERICK MD

MICROBIOLOGICAL ANALYZING METHODS FOR  
AEROSOLS.

(U)

MAR 57 63P  
REPT. NO. TRANS-215

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF UNIDENTIFIED MONO., N.P.,  
N.D.

DESCRIPTORS: (\*MICROORGANISMS, AEROSOLS), (\*AEROSOLS,  
ANALYSIS), PARTICLES, DUST, INFECTIONS, BACTERIAL  
AEROSOLS, FUNGI, SEDIMENTATION, MEASUREMENT, GAS  
FILTERS, LIQUID FILTERS, PAPER, SORPTION, AIR POLLUTION,  
RESPIRATION, LUNG (U)  
IDENTIFIERS: TRANSLATIONS (U)

MICROBIOLOGICAL ANALYZING METHODS FOR AFROSOLS--  
TRANSLATION.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 684 437 7/5 13/2  
NAVAL RESEARCH LAB WASHINGTON D C

THE INTERACTION OF RADON DECAY PRODUCTS WITH  
AEROSOLS.

(U)

DESCRIPTIVE NOTE: INTERIM REPT.,  
DEC 68 26P SAUNDERS, A. W., JR.;  
PATTERSON, R. L., JR.; LOCKHART, L. B., JR.

REPT. NO. NPL-6802  
PROJ: RR-001-05-42-4851

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AIR POLLUTION, \*AEROSOLS), (\*RADIATION  
CHEMISTRY, AEROSOLS), RADON, RADIOACTIVE DECAY,  
PHTHALATES  
IDENTIFIERS: DOP, PHTHALATE/DIOCTYL, SMOG

(U)

(U)

AN INSTRUMENTED PLASTIC CHAMBER WAS CONSTRUCTED AND  
USED TO STUDY THE STABILITY OF SOME SUBMICRON DIOCTYL  
PHTHALATE (D.O.P.) AEROSOLS AND THEIR  
INTERACTION WITH THE SHORT-LIVED RADIOACTIVE DECAY  
PRODUCTS OF RADON ( $^{222}\text{Rn}$ ). THE DEGREE OF  
ATTACHMENT OF THE RADON DECAY PRODUCTS TO THE  
D.O.P. AEROSOLS IN THIS CHAMBER HAS BEEN SHOWN  
TO BE A FUNCTION OF THE RELATIVE AREAS OF THE AEROSOL  
AND WALL SURFACES. AT HIGH AEROSOL CONCENTRATIONS  
(100,000 PARTICLES/CM<sup>3</sup>), 90% OR MORE OF THE  
SHORT-LIVED DECAY PRODUCTS ARE ATTACHED TO AEROSOL  
PARTICLES. AT LOWER AEROSOL CONCENTRATIONS AND  
PARTICULARLY WHEN CONVECTION INCREASES THE  
AVAILABILITY OF THE WALLS FOR DEPOSITION, THE  
AIRBORNE RADIOACTIVITY IS MUCH LESS. UNDER THE  
PROPER CONDITIONS APPRECIABLE QUANTITIES OF  
UNATTACHED RADON DESCENDANTS WILL REMAIN AIRBORNE.  
A FEW PRELIMINARY STUDIES WITH THESE 'FREE' ATOMS  
OR SIMPLE MOLECULES HAVE SHOWN THAT THEY ARE  
EFFECTIVELY RETAINED BY FIBROUS FILTERS. THEY THUS  
PROVIDE A USEFUL TOOL FOR EVALUATING THE RETENTIVITY  
OF FILTER MEDIA TOWARD EXTREMELY SMALL PARTICLES AND  
FOR STUDYING THE MECHANISM OF PARTICLE CAPTURE  
THROUGH DIFFUSIVE PROCESSES. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 685 851 4/2  
ATMOSPHERIC SCIENCES LAB WHITE SANDS MISSILE RANGE N  
MEX

THE ATMOSPHERIC AEROSOL, (U)

MAR 69 51P DUF0UR,L. I

PROJ: DA-1-T-061102-B-53-A

TASK: 1-T-061102-B-53-A-18

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF UNIDENTIFIED MONO., BY  
GLENN B. HOIDALE.

DESCRIPTORS: (\*METEOROLOGICAL PHENOMENA, AEROSOLS),  
ATMOSPHERIC CONDENSATION, AIR POLLUTION, NUCLEI,  
PARTICLES, PARTICLE SIZE, HUMIDITY, SAMPLING, CHEMICAL  
PROPERTIES, BROWNIAN MOTION, ICE FOG, DUST, SAND,  
COMBUSTION PRODUCTS (U)

IDENTIFIERS: AEROSOLS, ATMOSPHERIC PRECIPITATION,  
TRANSLATIONS (U)

THE AUTHOR DISCUSSES VARIOUS AEROSOLS PRESENT IN  
THE ATMOSPHERE, THEIR FORMULATION, THEIR PHYSICAL  
PROPERTIES, DISTRIBUTION AND VOLUME  
CONCENTRATION. (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 687 502 4/2

ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER WASHINGTON D  
C

INERTIAL MECHANISM OF SETTLING OF COARSELY DISPERSED  
AEROSOL ON TERRESTRIAL VEGETATION, (U)

69 17P DUNSKII, V. F. ;

REPT. NO. FSTC-HT-23-627-68

PROJ: FSTC-0503023C, FSTC-92236282301

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF VOPROSY ATMOSFERNOI  
DIFFUZII I ZAGRYAZNENIYA (PROBLEMS OF ATMOSPHERIC  
DIFFUSION AND AIR POLLUTION), PUB. IN GLAVNAYA  
GEOFIZICHESKAYA OBSERVATORIYA, LENINGRAD. TRUDY  
(USSR) N172 P183-191 1965.

DESCRIPTORS: (\*AEROSOLS, DEPOSITION), (\*PLANTS(ROTONY),  
CONTAMINATION), (\*AIR POLLUTION, AEROSOLS), MATHEMATICAL  
PREDICTION, TEST METHODS, LIQUIDS, SCATTERING,  
DIFFUSION, PARTICLE SIZE, DENSITY, ATMOSPHERES,  
ANALYSIS, USSR (U)

IDENTIFIERS: TRANSLATIONS (U)

THE DOCUMENT PRESENTS AN ANALYSIS OF EXPERIMENTAL  
DATA ON THE SCATTERING OF DROPS OF LIQUID IN THE  
ATMOSPHERE IS USED AS THE BASIS FOR DEMONSTRATING THE  
NECESSITY OF CONSIDERING THE INERTIAL SETTLING OF  
AEROSOLS ON TERRESTRIAL VEGETATION. A METHOD IS  
PROPOSED FOR ESTIMATING THE INERTIAL SETTLING IN A  
STUDY OF THE ATMOSPHERIC DIFFUSION OF COARSELY  
DISPERSED AEROSOLS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 687 710 20/4 1/1  
MASSACHUSETTS INST OF TECH CAMBRIDGE FLUID MECHANICS  
LAB

DUSTY HYPERSONIC FLOWS,

(U)

MAR 69 46P PROBSTEIN, RONALD F. ; FASSIO,  
FRANCO ;  
REPT. NO. PUB-69-2  
CONTRACT: NONR-1841(93)

UNCLASSIFIED REPORT

DESCRIPTORS: (\*TWO PHASE FLOW, INTERACTIONS),  
(\*AEROSOLS, HYPERSONIC CHARACTERISTICS), (\*DUST,  
HYPERSONIC FLOW), SHOCK WAVES, SLENDER BODIES, WEDGES,  
CONICAL BODIES, PARTICLE SIZE, RAINDROPS, STAGNATION  
POINT, SPHERES, CYLINDRICAL BODIES, REYNOLDS NUMBER,  
DRAG, EFFICIENCY, DISTRIBUTION (U)  
IDENTIFIERS: INVISCID FLOW (U)

A STUDY OF THE MOTIONS OF SOLID PARTICLES IN A  
DUSTY GAS IN THE INVISCID HYPERSONIC SHOCK LAYERS OF  
SLENDER WEDGES AND CONES AND THE STAGNATION REGIONS  
OF CYLINDERS AND SPHERES IS CARRIED OUT. PARTICLES  
OF UNIFORM SIZE AND WITH A SIZE DISTRIBUTION ARE  
CONSIDERED. ANALYTIC DRAG LAWS FOR THE PARTICLES  
ARE USED FOR THE CASES OF LOW, INTERMEDIATE, AND HIGH  
PARTICLE REYNOLDS NUMBERS. FOR A UNIFORM  
PARTICLE SIZE CLOUD THE COLLECTION EFFICIENCY IS  
SHOWN TO BE EXPRESSIBLE IN TERMS OF A SINGLE  
PARAMETER EMBODYING THE PARTICLE CHARACTERISTICS,  
SHOCK STRENGTH, AND WEDGE OR CONE ANGLE. IN THE  
CASE OF THE STAGNATION REGION SOLUTIONS THERE IS A  
CORRESPONDING SIMILARITY LAW BUT IT IS SHOWN NOT TO  
DEPEND ON THE EXPLICIT FORM OF THE DRAG LAW OR  
WHETHER THE FLOW IS PLANE OR AXISYMMETRIC. IT IS  
SHOWN THAT WHEN THE APPROPRIATE SIMILARITY PARAMETER  
IS AROUND ONE THE COLLECTION EFFICIENCY RISES RAPIDLY  
FROM ZERO TO ONE, WITH THE RISE ALMOST DISCONTINUOUS  
IN THE STAGNATION REGION CASES. WITH A PARTICLE  
SIZE DISTRIBUTION THERE IS FOUND TO BE VERY LITTLE  
DEVIATION FROM THE UNIFORM SIZE RESULTS AT HIGH  
REYNOLDS NUMBER AND ONLY SMALL DEPARTURES FOR OTHER  
REYNOLDS NUMBER RANGES. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 695 177 4/1 18/8  
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER WASHINGTON D  
C

THE STUDY OF THE CONCENTRATIONS OF LONG-DURATION  
RADIOACTIVE AEROSOLS OF ATMOSPHERIC AIR IN ITS  
RELATION TO THE AMOUNT OF DUST, (U)

SEP 69 9P KOZLOVA, M. V. ; KORENKOV, I.  
P. ; NOVIKOV, YU. V. ; GRANOVSKAYA, D. D. ;  
REPT. NO. FSTC-HT-23-443-69  
PROJ: FSTC-02RD5002301

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF UNIDENTIFIED RUSSIAN  
LANGUAGE ARTICLE.

DESCRIPTORS: (\*RADIOACTIVE CONTAMINATION, ATMOSPHERES),  
(\*ATMOSPHERES, DUST), RADIOACTIVE ISOTOPES, AEROSOLS,  
SAMPLING, USSR (U)  
IDENTIFIERS: TRANSLATIONS (U)

IT IS WELL KNOWN THAT AN INCREASE IN THE  
CONCENTRATION OF ATMOSPHERIC DUST CONTAINING STABLE  
ISOTOPES CAN LEAD TO A DECREASE IN THE SPECIFIC  
ACTIVITY OF DUST HOVERING IN THE AIR. IN THE GIVEN  
CASE, STABLE ATMOSPHERIC DUST APPEARS IN THE ROLL OF  
A FACTOR WHICH REDUCES THE AMOUNT OF RADIOACTIVE  
SUBSTANCES IN THE ATMOSPHERE OF AIR. SINCE IT IS  
NECESSARY TO TAKE THIS CONDITION INTO CONSIDERATION  
IN THE HYGIENIC EVALUATION OF THE RADIOACTIVE  
CONTAMINATION OF THE ATMOSPHERIC AIR, EXPERIMENTS  
WERE CARRIED OUT TO DETERMINE THE CONCENTRATION OF  
LONG-DURATION RADIOACTIVE SUBSTANCES AND DUST OF THE  
ATMOSPHERIC AIR IN MOSCOW. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 696 526

4/1

MINNESOTA UNIV MINNEAPOLIS SCHOOL OF PHYSICS AND  
ASTRONOMY

POSSIBLE IDENTIFICATION OF VOLCANIC DUST IN THE  
STRATOSPHERE.

(U)

DESCRIPTIVE NOTE: ATMOSPHERIC PHYSICS,

OCT 69

17P

ROSEN, JAMES M. ;

REPT. NO. AP-28

CONTRACT: N00014-67-A-0113

UNCLASSIFIED REPORT

DESCRIPTORS: (\*VOLCANOES, DUST), (\*AIR POLLUTION,  
AEROSOLS), (\*AEROSOLS, IDENTIFICATION), ATMOSPHERIC  
SOUNDING, BALLOONS, UNDERGROUND EXPLOSIONS, PARTICLE  
SIZE, DEPOSITS, COUNTING METHODS, GAS FILTERS,  
SCATTERING, PHOTOELECTRIC MATERIALS, DETECTORS,  
PANAMA

(U)

IDENTIFIERS: BALI ERUPTION

(U)

BALLOON SOUNDINGS OF THE ATMOSPHERIC AEROSOL MADE  
AT THREE DIFFERENT LATITUDES CONFIRM THE EXISTENCE OF  
A WIDESPREAD DUST LAYER OVER THE NORTHERN  
HEMISPHERE. SOUNDINGS MADE AT MINNEAPOLIS OVER  
A PERIOD OF FIVE YEARS SHOW SEASONAL FLUCTUATIONS IN  
THE TOTAL STRATOSPHERIC DUST BY AS MUCH AS A FACTOR  
OF FOUR WITH A SUGGESTION OF A SECULAR DECREASE FROM  
1963 TO 1968. SOUNDINGS MADE AT PANAMA SHOW A  
DECREASE OF THE DUST BY A FACTOR OF TEN FROM 1966 TO  
1968. THIS RAPID DECREASE IN THE AMOUNT OF THE  
EQUATORIAL DUST IS NOT INCONSISTENT WITH THE  
ESTIMATED RATES OF DILUTION AND DISPERSION OF  
RADIOACTIVE BOMB DEBRIS BY HORIZONTAL AND VERTICAL  
EDDY MOTION. THE SPECTRUM OF PARTICLE SIZE OF THE  
PANAMA AEROSOL IS CONSIDERABLY FLATTER THAN THAT OF  
THE MID-LATITUDE AEROSOL, INDICATING THEY MAY BE OF  
DIFFERENT ORIGIN. IT IS SUGGESTED THAT THESE  
ADDITIONAL EQUATORIAL PARTICLES ARE THE RESIDUE OF  
VOLCANIC MATERIAL INJECTED INTO THE STRATOSPHERE IN  
THE BALI EXPLOSION OF 1963. A MORE DEFINITIVE  
MEASUREMENT OF THE AEROSOL SPECTRUM AT MID-LATITUDE  
SHOWS A SLOPE ONLY SLIGHTLY FLATTER THAN THAT  
REPORTED BY JUNGE IN 1961 BUT WITH CONSIDERABLY  
GREATER CONCENTRATION OF PARTICLES LARGER THAN 1  
MICRON. THIS COULD BE CAUSED BY AN INCREASE IN THE  
NUMBER OF LARGE PARTICLES AFTER THE BALI EVENT OR A  
LOSS OF LARGE VOLATILE PARTICLES COUNTED BY FILTER  
METHODS. (AUTHOR)

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 696 541 13/2

MINNESOTA UNIV MINNEAPOLIS SCHOOL OF PHYSICS AND  
ASTRONOMY

THE VERTICAL DISTRIBUTION OF PARTICULATE MATTER NEAR  
THE SURFACE OF THE EARTH. (U)

DESCRIPTIVE NOTE: ATMOSPHERIC PHYSICS,  
OCT 69 15P ROSEN, JAMES M. ;  
REPT. NO. AP-29  
CONTRACT: N00014-67-A-0113

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PUB. IN JNL. OF AIR POLLUTION,  
V19 12P FEB 69.

DESCRIPTORS: (\*AIR POLLUTION, MINNESOTA), (\*AEROSOLS,  
DISTRIBUTION), DUST, PARTICLES, TRANSPORT PROPERTIES,  
ATMOSPHERIC SOUNDING, PHOTOELECTRIC MATERIALS, COUNTING  
METHODS, BALLOONS, DETECTORS, HUMIDITY, PARTICLE SIZE,  
WIND, VELOCITY, ATMOSPHERIC TEMPERATURE, PANAMA (U)  
IDENTIFIERS: MINNEAPOLIS(MINNESOTA) (U)

THE VERTICAL DISTRIBUTION OF PARTICULATE MATTER  
NEAR MINNEAPOLIS AND PANAMA IS REPORTED AND THE  
INFLUENCE OF TEMPERATURE, RELATIVE HUMIDITY AND WIND  
VELOCITY ON THE DUST CONCENTRATION IS DISCUSSED.  
(AUTHOR) (U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 697 684 4/1  
MINNESOTA UNIV MINNEAPOLIS SCHOOL OF PHYSICS AND  
ASTRONOMY

METEORIC DUST DETECTION BY LIGHT SCATTERING  
TECHNIQUES.

(U)

DESCRIPTIVE NOTE: ATMOSPHERIC PHYSICS,  
OCT 69 22P ROSEN, J. M. ;  
REPT. NO. AP-30  
CONTRACT: N00014-67-A-0113-0004

UNCLASSIFIED REPORT

DESCRIPTORS: (\*STRATOSPHERE, \*METEORS), (\*DUST,  
MEASUREMENT), METEORITES, DETECTION, BALLOONS,  
CONTAMINATION, DETECTORS, LIGHT TRANSMISSION, SCATTER (U)  
IDENTIFIERS: METEORIC DUST (U)

A CAREFUL REVIEW AND ANALYSIS OF THE PRESENT STATE  
OF KNOWLEDGE OF METEORIC INFLUX ON THE EARTH  
INDICATES THAT A MEASUREMENT OF THE LARGE DUST  
PARTICLE CONCENTRATION (DIAMETER GREATER THAN 2  
MICRONS) IN THE UPPER STRATOSPHERE WOULD BE HIGHLY  
DESIRABLE, ESPECIALLY AFTER A METEOR SHOWER. A  
BALLOON-BORNE DETECTION TECHNIQUE IS SUGGESTED THAT  
IS SIMILAR TO THAT FIRST USED BY THE AUTHOR TO  
MEASURE THE VERTICAL DISTRIBUTION OF SUBMICRON  
PARTICLES TO 30 KM ALTITUDE. THIS DETECTION  
TECHNIQUE WOULD BE FREE OF CONTAMINATION FROM THE  
BALLOON AND ITS ASSOCIATED EQUIPMENT. A LABORATORY  
MODEL OF THE DETECTOR THAT HAS BEEN DEVELOPED AND  
TESTED IS DESCRIBED. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 697 871 13/2

SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

CHEMICAL CONCENTRATIONS OF POLLUTANT LEAD AEROSOLS,  
TERRESTRIAL DUSTS AND SEA SALTS IN GREENLAND AND  
ANTARCTIC SNOW STRATA, (U)

APR 69 51P CHOW, TSAI HWA J. ; PATTERSON,

C. ; MUROZUMI, M. ;

REPT. NO. CONTRIB-1587

CONTRACT: N00014-69-A-0200-6006, AT(04-3)-427

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN GEOCHIMICA ET COSMOCHIMICA  
ACTA, V33 P1247-1294, 1969.

SUPPLEMENTARY NOTE: REVISION OF REPORT DATED 2 JAN 69.  
SPONSORED IN PART BY NATIONAL SCIENCE FOUNDATION,  
WASHINGTON, D. C., GRANT NSF-GA-233, AND PUBLIC  
HEALTH SERVICE, WASHINGTON, D. C. PHS-AP0027.

DESCRIPTORS: (\*AIR POLLUTION, \*POLAR REGIONS),  
(\*AEROSOLS, \*LEAD(METAL)), DUST, SEA WATER, CHEMICAL  
PROPERTIES, WATER POLLUTION, LEAD COMPOUNDS, ICE,  
CONCENTRATION(CHEMISTRY), SILICATES, PERIODIC  
VARIATIONS, GREENLAND, ANTARCTIC REGIONS (U)  
IDENTIFIERS: SEA SALTS (U)

IN THIS STUDY WE REPORT ANALYSES OF LEAD IN ANNUAL  
ICE LAYERS FROM THE INTERIOR OF NORTHERN GREENLAND  
AND IN ANNUAL LAYERS OF ICE FROM THE INTERIOR OF THE  
ANTARCTIC CONTINENT. OBSERVATIONS OF THE  
CHEMICAL CONCENTRATIONS OF THE COMMON ELEMENTS IN ICE  
FROM THE INTERIOR OF GREENLAND AND ANTARCTICA CAN  
BE EXPLAINED IN TERMS OF SIMPLE RELATIONS AMONG SEA  
SALTS AND TERRESTRIAL DUSTS. THERE ARE SEASONAL  
VARIATIONS IN THE AMOUNTS OF POLLUTANT LEAD, SEA  
SALTS AND SILICATE DUSTS IN THE SNOWS, POLLUTANT LEAD  
AND SEA SALTS BEING TWO OR THREE TIMES MORE  
CONCENTRATED IN WINTER THAN IN SUMMER SNOWS, WHILE  
SILICATE DUSTS WERE THREE TIMES MORE CONCENTRATED IN  
SPRING THAN IN WINTER SNOWS. THE ABOVE  
INTERPRETATION, WHICH UNIFIES ALL THE DATA, IS  
CONSISTENT WITH MOST RELATED CHEMICAL AND  
METEOROLOGICAL OBSERVATIONS AT TEMPERATE LATITUDES.  
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 697 964 8/12 4/1 7/4 13/2  
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

CHEMICAL CONCENTRATIONS OF POLLUTANT LEAD AEROSOLS,  
TERRESTRIAL DUSTS, AND SEA SALTS IN GREENLAND AND  
ANTARCTIC SNOW STRATA, (U)

69 110P CHOW, TSAI HWA J. ; PATTERSON,  
C. ; MUROZUMI, M. ;  
CONTRACT: NONR-2216(23)

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH  
CALIFORNIA INST. OF TECH., PASADENA. DIV. OF  
GEOLOGICAL SCIENCES, CONTRACT AT(04-3)-427.  
REPT. NO. CALT-427-30 AND MURORAN INST. OF TECH.,  
HOKKAIDO (JAPAN).

DESCRIPTORS: (\*AIR POLLUTION, AEROSOLS), (\*LEAD  
COMPOUNDS, \*SNOW), (\*DUST, SNOW), (\*SALTS, SNOW),  
ANTARCTIC REGIONS, GREENLAND, SOILS, ICE,  
CONCENTRATION(CHEMISTRY), SEA WATER, SODIUM COMPOUNDS,  
CHLORIDES, MAGNESIUM COMPOUNDS, CALCIUM COMPOUNDS,  
POTASSIUM COMPOUNDS, SILICATES, COASTAL REGIONS (U)

THE REPORT DESCRIBES RESULTS OF AN ANALYSES OF LEAD  
IN ANNUAL ICE LAYERS FROM THE INTERIOR OF NORTHERN  
GREENLAND AND IN ANNUAL LAYERS OF ICE FROM THE  
INTERIOR OF THE ANTARCTIC CONTINENT. THE  
OBSERVATIONS OF THE CHEMICAL CONCENTRATIONS OF THE  
COMMON ELEMENTS IN ICE FROM THE INTERIOR OF  
GREENLAND AND ANTARCTICA CAN BE EXPLAINED IN  
TERMS OF SIMPLE RELATIONS AMONG SEA SALTS AND  
TERRESTRIAL DUSTS. ABOUT TEN TIMES MORE DUST WAS  
FOUND IN GREENLAND INTERIOR ICE THAN IN ANTARCTIC  
INTERIOR ICE, BUT TWICE AS MUCH SEA SALT WAS FOUND IN  
ANTARCTIC INTERIOR ICE THAN IN GREENLAND INTERIOR  
ICE. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 699 296 6/5

EIDGENÖSSISCHE TECHNISCHE HOCHSCHULE ZÜRICH (SWITZERLAND)  
INSTITUT FÜR HYGIENE UND ARBEITSPHYSIOLOGIE

STAUBNIEDERSCHLAG IN ZÜRICH (DUST CONDITIONS IN  
ZÜRICH),

(U)

67 8P DEUBER, VON A. ; GILGEN, A. ;  
GRANDJEAN, E. ;

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN NEUE ZÜRCHER ZEITUNG,  
BLATT 10 N4394(179) 8P, 18 OCT 67. NO COPIES  
FURNISHED.

SUPPLEMENTARY NOTE: TEXT IN GERMAN.

DESCRIPTORS: (\*DUST, SWITZERLAND), DEPOSITION, PERIODIC  
VARIATIONS, URBAN AREAS, COLLECTING METHODS,  
MEASUREMENT, STATISTICAL DISTRIBUTIONS, MEDICAL  
RESEARCH, SWITZERLAND (U)

IDENTIFIERS: DUST DEPOSITION,  
\*ZÜRICH(SWITZERLAND) (U)

MEASUREMENTS OF DUST DEPOSITION IN ZÜRICH,  
SWITZERLAND, ARE REPORTED FOR RESIDENTIAL AREAS AND  
INDUSTRIAL AREAS OVER A PERIOD OF TWO YEARS. (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 694 609

4/1

AIR FORCE CAMBRIDGE RESEARCH LABS L G HANSCOM FIELD  
MASS

FEATURES OF TROPOSPHERIC AND STRATOSPHERIC DUST,

(U)

DEC 68

13P

ELTERMAN, L. ; WEXLER, R. ;

CHANG, D. T. ;

REPT. NO. AFCRL-70-0030

PROJ: AF-7621

TASK: 762108

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN APPLIED OPTICS, V8 N5 P893-  
903 MAY 69.

DESCRIPTORS: (\*UPPER ATMOSPHERE, DUST), (\*AEROSOLS,  
MEASUREMENT), CONVECTION(ATMOSPHERIC), TROPOSPHERE,  
STRATOSPHERE, ATMOSPHERE MODELS, LIGHT TRANSMISSION,  
STATISTICAL ANALYSIS, NEW MEXICO  
IDENTIFIERS: VOLCANIC DUST

(U)

(U)

A SERIES OF 119 PROFILES OBTAINED OVER NEW MEXICO COMPRISE AEROSOL ATTENUATION COEFFICIENTS VS ALTITUDE TO ABOUT 35 KM. THESE PROFILES SHOW THE EXISTENCE OF SEVERAL FEATURE. A SURFACE CONVECTIVE DUST LAYER EXTENDING UP TO ABOUT 5 KM IS SEASONALLY DEPENDENT. ALSO, A TURBIDITY MAXIMUM EXISTS BELOW THE TROPOPAUSE. THE ALTITUDE OF AN AEROSOL MAXIMUM IN THE LOWER STRATOSPHERE IS LOCATED JUST BELOW THAT OF THE MINIMUM TEMPERATURE. THE COLDER THE MINIMUM TEMPERATURE, THE GREATER IS THE AEROSOL CONTENT OF THE LAYER. THIS RELATIONSHIP SUGGESTS THAT THE 20-KM DUST LAYER IS DUE TO CONVECTION IN TROPICAL AIR AND ADVECTION TO HIGHER LATITUDES. COMPUTED AVERAGES OF OPTICAL THICKNESS SHOW THAT ABATEMENT OF STRATOSPHERIC DUST FROM THE MT. AGUNG ERUPTION BECAME EVIDENT IN APRIL 1964. RESULTS BASED ON SEVENTY-NINE PROFILES CHARACTERIZING DUST ABATEMENT INDICATE THAT ABOVE 26 KM, THE AEROSOL SCALE HEIGHT AVERAGES 3.75 KM. EXTRAPOLATING WITH THIS SCALE HEIGHT, TABULATIONS ARE DEVELOPED FOR UV, VISIBLE, AND IR ATTENUATION TO 50 KM. OPTICAL MIXING RATIOS ARE USED TO EXAMINE THE AEROSOL CONCENTRATIONS AT VARIOUS ALTITUDES, INCLUDING A LAYER AT 26 KM HAVING AN OPTICAL THICKNESS 0.001 FOR 0.55-MICRONS WAVELENGTH. (AUTHOR)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 700 929 6/11 13/11 13/10  
BOLT BERANEK AND NEWMAN INC CAMBRIDGE MASS

AEROSOL BEHAVIOR IN HIGH PRESSURE  
ENVIRONMENTS.

(U)

DESCRIPTIVE NOTE: ANNUAL REPT. NO. 2 (FINAL), 1 MAR  
69-28 FEB 70,  
FEB 70 35P GUSSMAN, ROBERT A. ; SACCO,  
ANTHONY M. ;  
REPT. NO. BRN-1894  
CONTRACT: N00014-69-C-0228  
PROJ: NR-303-829

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO REPORT DATED 1 MAR 68-28  
FEB 69, AD-683 794.

DESCRIPTORS: (\*UNDERWATER VEHICLES, \*CONTROLLED  
ATMOSPHERES), (\*AEROSOLS, HIGH PRESSURE), (\*FLUID  
FILTERS, DESIGN), HELIUM, OXYGEN, RESPIRATION, PARTICLE  
SIZE, SEDIMENTATION, LUNG, ELECTROSTATIC PRECIPITATION,  
DIFFUSION, TEST METHODS (U)  
IDENTIFIERS: \*AEROSOL FILTRATION, \*AIR CLEANERS, DEEP  
OCEAN VEHICLES (U)

THE SECOND YEAR OF A STUDY HAS BEEN COMPLETED WHOSE  
MAIN PURPOSE IS TO ELUCIDATE HAZARDS TO PERSONNEL  
ARISING FROM AEROSOLS IN HIGH PRESSURE HELIUM-OXYGEN  
ATMOSPHERES. THE YEAR'S EFFORTS INCLUDED:  
EXPERIMENTAL STUDIES ON THE GENERATION OF AEROSOLS IN  
THE HIGH PRESSURE ENVIRONMENT, PULMONARY DEPOSITION  
MODELING, THEORETICAL FILTER EFFICIENCY CALCULATIONS,  
AND THE CONSTRUCTION OF A HIGH PRESSURE FILTRATION  
EFFICIENCY TEST APPARATUS. THE FIRST TWO TOPICS  
LISTED ARE DESCRIBED SEPARATELY IN A PREVIOUS SPECIAL  
REPORT, AD-683 794. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 700 974 4/2 13/2  
WASHINGTON UNIV SEATTLE COLL OF FOREST RESOURCES

DISPERSION OF AIR TRACERS INTO AND WITHIN A FORESTED  
AREA. VOLUME I. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,  
SEP 69 40P FRITSCHEN, LEO J. ; DRIVER,  
CHARLES H. ; AVERY, CHARLES ; BUFFO, JOHN ;  
EDMONDS, ROBERT ;

CONTRACT: DA-AMC-28-043-68-G8

PROJ: DA-1-T-061102-B-53-A

TASK: 1-T-061102-B-53-A-17

MONITOR: ECOM 68-G8-1

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AIR POLLUTION, TRACER STUDIES),  
(\*AEROSOLS, DIFFUSION), ATMOSPHERIC TEMPERATURE, POLLEN,  
GASES, FLUORESCENCE, DYES, INSECTS, MICROORGANISMS, (U)  
WIND, FORESTRY (U)  
IDENTIFIERS: PLANT CANOPY (U)

DISPERSION OF FLUORESCENT POWDERS, DYES AND SPORES  
FROM A CLEARCUT AREA INTO AND WITHIN A 45-YEAR OLD  
DOUGLAS-FIR FOREST WAS STUDIED UNDER VARIOUS  
METEOROLOGICAL CONDITIONS. A TOTAL OF 111 ROTORODS  
SAMPLERS WERE USED TO TRAP THE TRACERS WITHIN A  
CANOPY VOLUME OF 20 M HEIGHT, 210 M WIDTH AND 270 M  
LENGTH. WIND SPEED, DIRECTION AND AIR TEMPERATURE  
WERE MONITORED ON FIVE TOWERS ON A LINE PERPENDICULAR  
TO THE FOREST WALL. TWENTY-FOUR MULTIPLE LOCATION  
RELEASES WERE MADE DURING 1968 AND 1969. PART 1  
DESCRIBES THE EXPERIMENTAL SITE, PROCEDURES AND  
METHODS, PART 11 CONTAINS DATA COLLECTED AND PART  
111 RESULTS, DISCUSSION AND CONCLUSIONS.  
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 702 332 6/6 13/2  
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

DISPERSION PATTERNS OF AEROSOL PARTICLES IN A FREE  
ATMOSPHERE. (U)

NOV 69 51P PETROVA, G. M. ; MIROSHKINA,  
A. N. ;  
REPT. NO. FTD-MT-24-283-69  
PROJ: FTD-6030201

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED MACHINE TRANS. OF INSTITUT  
PRIKLADNOI GEOFIZIKI, LENINGRAD. TRUDY (USSR) N4  
P5-40 1967.

DESCRIPTORS: (\*SPRAYS, AIR POLLUTION), (\*AEROSOLS, AREA  
COVERAGE), INSECTICIDES, SCATTERING, LUMINESCENCE,  
ATMOSPHERIC MOTION, TRACER STUDIES, POWDERS, USSR (U)  
IDENTIFIERS: STRATIFICATION, TRANSLATIONS (U)

A COMPREHENSIVE DESCRIPTION AND ANALYSIS ARE  
PRESENTED OF EXPERIMENTAL STUDIES OF THE DISPERSAL  
AND FALLOUT OF SOLID PARTICLES (LUMINESCENT SAND  
PARTICLES, 100-1000 MU IN DIAMETER, AND LUMINESCENT  
PLASTIC PARTICLES, 30-100 MU IN DIAMETER)  
DISPERSED AT HEIGHTS OF 500 -8000 M IN THE FREE  
ATMOSPHERE AND FALLING OUT AT A RATE OF FROM 0.1 TO 3  
M/SEC. THE TRACES OF THE AEROSOL PARTICLE FALLOUT  
WERE MEASURED TO DETERMINE THE RELATIONSHIPS BETWEEN  
THEIR PRINCIPAL CHARACTERISTICS (SURFACE  
CONCENTRATIONS, POSITIONS OF ZONES OF MAXIMUM  
PARTICLE CONCENTRATION, AMOUNT OF SURFACE  
CONCENTRATION DISPERSION) AND TOTAL AMOUNT OF  
PARTICLES EJECTED, THE WIND SPEED, AND RATE OF  
PARTICLE FALLOUT. THE INFORMATION PRESENTED  
INCLUDES: DESCRIPTION OF EXPERIMENTAL PROCEDURES  
(PREPARATION OF LUMINESCENT PARTICLES AND LOCATION,  
DESCRIPTION, PERIOD OF OPERATION AND SIZES OF TEST  
SITES; METHODS OF AEROLOGICAL OBSERVATION (PIBAL,  
AIRCRAFT); AND IDENTIFICATION AND GROUPING OF FOUR  
TYPES OF ATMOSPHERIC STRATIFICATION. THE FIELD  
RESULTS ARE GRAPHED, TABULATED, AND SUMMARIZED IN  
DETAIL. EMPIRICAL RELATIONSHIPS INVESTIGATED  
RELATED TO ANALYSIS OF THE PRACTICAL UTILIZATION OF  
THE EQUATION FOR TURBULENT DIFFUSION AND THE  
COEFFICIENT OF TURBULENT MIXING IN THE DERIVATION OF  
A SIMPLE EMPIRICAL EQUATION. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 703 172 13/2 7/4  
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

ON THE PROBLEM OF THE SETTLING OF AN ARTIFICIAL  
AEROSOL CLOUD IN THE ATMOSPHERE, (U)

NOV 69 17P MIROSHKINA, A. N. ; PETROVA,  
G. M. ;  
REPT. NO. FTD-MT-24-302-69  
PROJ: FTD-6030201

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED MACHINE TRANS. OF INSTITUT  
PRIKLADNOI GEOFIZIKI, LENINGRAD. TRUDY (USSR) N4  
P41-47 1967.

DESCRIPTORS: (\*AIR POLLUTION, AEROSOLS), (\*AEROSOLS,  
SCATTERING), INTERACTIONS, LUMINESCENCE, ATMOSPHERES, (U)  
ACRYLIC RESINS, USSR  
IDENTIFIERS: TRANSLATIONS (U)

AN ANALYSIS IS MADE OF DATA OBTAINED TO DETERMINE  
THE RATE OF SETTLING, THE MOVEMENT ALONG TRAJECTORIES  
AND THE POSITIONS, EXTENT, AND DISTANCE FROM THE  
SOURCE OF SURFACE CONCENTRATION MAXIMA OF ARTIFICIAL  
AEROSOL CLOUDS. THE AEROSOL USED CONSISTED OF  
LUMINESCENT PARTICLES OF POLYMETHYLMETHACRYLLATE  
RELEASED INTO THE ATMOSPHERE AT VARIOUS SPEEDS AND IN  
VARIOUS WEATHER CONDITIONS. ANALYSIS OF THESE DATA  
INDICATES THE FOLLOWING: FOR FINELY DISPERSED  
PARTICLES, INTRODUCED INTO THE ATMOSPHERE IN SMALL  
CONCENTRATIONS OR UNDER EXPERIMENTAL CONDITIONS IN  
WHICH THE INITIAL INTERACTION OF THE PARTICLES WITH  
THE ATMOSPHERE CEASES ALMOST IMMEDIATELY, THE SURFACE  
FALLOUT CONCENTRATION IS MAXIMUM AT A DISTANCE FROM  
THE SOURCE AND DEPENDS ON THE VERTICAL COEFFICIENT OF  
PARTICLE DISPERSION, WHEN THE INITIAL VOLUME OF  
PARTICLES DISCHARGED IS LARGE, ESPECIALLY THOSE  
DISPERSED FROM AIRCRAFT INTO AN UNSTABLY STRATIFIED  
ATMOSPHERE, THE SURFACE CONCENTRATION MAXIMUM IS MUCH  
CLOSER. IF THE AEROSOL CLOUD SETTLES FAST ENOUGH, A  
SECOND SURFACE CONCENTRATION MAXIMUM DOES NOT OCCUR.  
(AUTHOR) (U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 704 209 6/10 13/2

FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

DETERMINING THE CONCENTRATION OF OIL AEROSOLS IN THE  
AIR OF INDUSTRIAL INSTALLATIONS BY THE GRAVIMETRIC  
METHOD WITH THE AID OF FPP-15 FILTERS, (U)

JAN 70 8P LUTOV, V. A. ;

REPT. NO. FTD-HT-23-642-69

PROJ: FTD-6030201

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF GIGIENA TRUDA I  
PROFESSIONALNYE ZABOLEVANIYA (USSR) V8 N2 P53-55 1964,  
BY L. THOMPSON.

DESCRIPTORS: (\*AIR POLLUTION, WASTES(INDUSTRIAL)),  
(\*AEROSOLS, GRAVIMETRIC ANALYSIS), FLUID FILTERS,  
COTTON, EFFECTIVENESS, FLUORESCENCE, USSR (U)  
IDENTIFIERS: TRANSLATIONS (U)

THE ARTICLE GIVES THE ADVANTAGES AND LIMITATIONS IN  
USING FPP 15 FILTERS TO DETERMINE THE CONCENTRATION  
OF OIL AEROSOLS IN THE AIR OF INDUSTRIAL  
INSTALLATIONS BY THE GRAVIMETRIC METHOD. THE  
EFFECTIVENESS OF THESE FILTERS IS COMPARED TO THAT OF  
COTTON FILTERS USED IN THE GRAVIMETRIC METHOD  
DEVELOPED BY A. N. ANISIMOV, AND TO THE  
EFFECTIVENESS OF THE FLUORESCENT METHOD.  
(AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 704 709 8/12  
UNITED STATES LAKE SURVEY DETROIT MICH

A LITERATURE REVIEW OF DUSTING TECHNOLOGY IN  
DEICING.

(U)

DESCRIPTIVE NOTE: RESEARCH REPT.,  
DEC 69 53P CAVAN, BRUCE P. ;  
REPT. NO. RP-5-7

UNCLASSIFIED REPORT

DESCRIPTORS: (\*ICE, MELTING), (\*SNOW, DUST), COAL, SAND,  
CARBON, WASTES(INDUSTRIAL), ATMOSPHERIC TEMPERATURE,  
ABSTRACTS, SOILS, PARTICLE SIZE, WATER POLLUTION, SEA  
ICE, MAPS, BIBLIOGRAPHIES, DYES (U)  
IDENTIFIERS: \*ICE DISINTEGRATION, DEICING,  
DUSTING (U)

THE SURVEY REVIEWED SELECTED ABSTRACTS AND  
MANUSCRIPTS FROM NORTH AMERICA, EUROPE, AND  
ASIA. THE MAJORITY OF THE STUDIES WERE CARRIED  
OUT IN THE SOVIET UNION. THE COMMONLY USED  
DUSTING MATERIALS WERE COAL DUST, CINDERS, FLY ASH,  
SAND, AND CARBON DUST, AND THE MOST EFFECTIVE GRAIN  
SIZE WAS 0.2-2.0 MICROMICRONS (.008-.08 IN.).  
FOR MAXIMUM RESULTS DUSTING MUST BE CARRIED OUT  
JUST PRIOR TO NATURAL BREAK-UP OF THE ICE WHILE AIR  
TEMPERATURES ARE CLOSE TO 32 DEGREES F. THE  
STUDIES ARE INDEXED BY COUNTRY, AUTHOR, MATERIALS,  
CONCENTRATIONS AND THE AVERAGE GRAIN SIZE. THE  
APPENDICES CONTAIN AN INDEX OF TECHNIQUES AND  
ABSTRACTS OF THE REVIEWED ARTICLES.  
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 704 755 4/1 20/6  
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

THE POSSIBILITY OF USING THE TRANSPARENCY METHOD TO  
DETERMINE THE MICROSTRUCTURE OF AN ATMOSPHERIC  
AEROSOL, (U)

FEB 70 16P BAKHTIYAROV, V. G. ;  
REPT. NO. FTD-HT-23-97-70  
PROJ: FTD-7230178

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF VYSOKOGORNYI  
GEOFIZICHESKII INSTITUT, NALCHIK. TRUDY (USSR) NR  
P41-48 1968, BY D. KOOLBECK.

DESCRIPTORS: (\*ATMOSPHERES, OPTICAL PROPERTIES),  
(\*AEROSOLS, MICROSTRUCTURE), PARTICLES, SCATTERING,  
ULTRAVIOLET SPECTRA, VISIBLE SPECTRA, ATTENUATION,  
PHOTOMETERS, ABSORPTION, USSR (U)  
IDENTIFIERS: ATMOSPHERE LAYERS, TRANSLATIONS,  
TRANSPARENCY (U)

A DISCUSSION IS PRESENTED ON THE APPLICATION OF THE  
VISIBILITY METHOD IN CALCULATING THE SPECTRA OF THE  
PARTICLES IN A DISPERSED SYSTEM IN THE FREE  
ATMOSPHERE, I.E., TO DETERMINE THE SIZE SPECTRA OF  
ATMOSPHERIC AEROSOLS. THE FIRST SECTION OF THE  
PAPER DEALS WITH THE DIFFICULTIES ENCOUNTERED IN  
USING THE METHOD, I.E., DETERMINATION OF THE  
POLYDISPERSED SCATTERING COEFFICIENT FOR THE  
SIGNIFICANT IR AND SHORT WAVELENGTHS, IN AN  
ATMOSPHERE IN WHICH RADIATION IS ATTENUATED BY  
ABSORPTION BY GASEOUS COMPONENTS AND BY SCATTERING,  
AND ALONG BOTH OFF-VERTICAL AND HORIZONTAL PATHS.  
RESULTS OBTAINED BY BOTH AMERICAN AND SOVIET  
SPECIALISTS ARE COMPARED. THE SECOND SECTION DEALS  
WITH PROBLEMS ENCOUNTERED IN MAKING ACTUAL HORIZONTAL  
MEASUREMENTS OF ATMOSPHERIC AEROSOL VISIBILITY IN THE  
VISIBLE, NEAR UV, AND IR RANGES OVER PATHS 5-10  
KM ABOVE THE EARTH. A PROCEDURE IS PRESENTED FOR  
DETERMINING VISIBILITY. THE FLUX OF RADIATION FROM  
A SOURCE LOCATED IN THE FOCUS OF THE FIRST MIRROR  
PASSES THROUGH THE ATMOSPHERIC LAYER.  
(AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 705 202 4/1 4/2

ALLIED RESEARCH ASSOCIATES INC CONCORD MASS

METEOROLOGICAL RELATIONSHIPS TO TROPOSPHERIC AND  
STRATOSPHERIC TURBIDITY PROFILES. (U)

DESCRIPTIVE NOTE: FINAL REPT. 20 JAN 69-30 APR 70,

APR 70 30P CHANG, DAVID T. WEXLER,

RAYMOND ;

REPT. NO. APA-9668-F

CONTRACT: F19628-69-C-0040

PROJ: AF-7621

TASK: 762101

MONITOR: AFCRL 70-0197

UNCLASSIFIED REPORT

DESCRIPTORS: (\*TROPOSPHERE, AEROSOLS), (\*STRATOSPHERE,  
AEROSOLS), (\*AEROSOLS, MEASUREMENT), OPTICAL PROPERTIES,  
ATTENUATION, CONVECTION(ATMOSPHERIC), AIR POLLUTION,  
VOLCANOES, DUST, ATMOSPHERIC PRECIPITATION, ATMOSPHERIC  
TEMPERATURE, TROPICAL REGIONS, POLAR REGIONS (U)  
IDENTIFIERS: PROFILES, TEMPERATURE, TURBIDITY (U)

THE REPORT COMPLETES THE EXAMINATION OF 176 SETS OF  
DATA OBTAINED WITH OPTICAL PROBING MEASUREMENTS IN  
NEW MEXICO. THE STUDY SHOWS THAT: (1) A  
SEASONAL TREND IN THE SHAPE OF THE AEROSOL  
ATTENUATION COEFFICIENT PROFILE IN THE SURFACE LAYER  
WHICH IS RELATED TO THE STRENGTH OF THE DIURNAL  
SURFACE CONVECTION; (2) THE SCAVENGING EFFECTS OF  
PRECIPITATION ARE EVIDENT IN THE ANALYSIS OF MID-  
TROPOSPHERIC AEROSOL CONTENTS; (3) THE  
RELATIONSHIP BETWEEN THE POLAR TROPOPAUSE AND UPPER  
TROPOSPHERIC AEROSOL LAYER WAS LESS WELL DEFINED IN  
THE DATA OBTAINED DURING THE LATTER PART OF 1965;  
(4) DATA FROM THE LATTER PART OF 1965 SUPPORT THE  
FINDINGS THAT STRATOSPHERIC AEROSOLS HAVE A TROPICAL  
ORIGIN; AND (5) THE SLOW ABATEMENT OF THE MT.  
AGUNG VOLCANIC DUST THROUGH 1965 IS EVIDENT IN  
CHANGES IN STRATOSPHERIC OPTICAL THICKNESS.  
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 705 808 4/1

AIR FORCE CAMBRIDGE RESEARCH LABS L G HANSCOM FIELD  
MASS

ON DUST IN THE TROPICAL AND MIDLATITUDE STRATOSPHERE  
FROM RECENT TWILIGHT MEASUREMENTS, (U)

DEC 69 7P VOLZ, F. E. ;  
REPT. NO. AFCRL-70-0233  
PROJ: AF-7621  
TASK: 762106

UNCLASSIFIED REPORT

AVAILABILITY: PUB IN JNL. OF GEOPHYSICAL  
RESEARCH, V75 N9 P1641-1646, 20 MAR 70.

SUPPLEMENTARY NOTE: REVISION OF REPORT DATED 3 NOV  
69.

DESCRIPTORS: (\*STRATOSPHERE, \*DUST), TWILIGHT,  
VOLCANOES, TROPICAL REGIONS (U)

THE VARIATION OF STRATOSPHERIC TURBIDITY IN RECENT  
YEARS IN MIDLATITUDES AND IN THE TROPICS AS INDICATED  
BY THE AMPLITUDE OF THE WAVELENGTH 715/477 OR  
WAVELENGTH 810/500 COLOR RATIO OF TWILIGHT RADIANCE  
AT 20 DEG ELEVATION IS INVESTIGATED. SINCE LATE  
1963, THE STRATOSPHERIC TURBIDITY IN NORTHERN MID-  
LATITUDES HAS BEEN MUCH HIGHER THAN IT WAS BEFORE THE  
EXPLOSION OF THE AGUNG VOLCANO IN MARCH 1963; A  
CONSIDERABLE LATITUDE EFFECT IS INDICATED. IN THE  
TROPICS, THE STRATOSPHERIC DUST LAYER WAS EVEN  
STRONGER (AND AT A GREATER ALTITUDE) IN 1969, AND  
VERY LIKELY WAS ALSO STRONGER DURING THE PRECEDING  
YEARS. THERE IS NOT MUCH DIRECT EVIDENCE THAT THE  
APPARENTLY PERSISTENT, YET ABNORMAL, TROPICAL  
RESERVOIR OF STRATOSPHERIC AEROSOL WAS REPLENISHED BY  
MORE RECENT VOLCANIC ACTIVITY. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 706 206 13/8

FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

DUST COLLECTING,

(U)

MAR 70 21P UZHOV, V. N. ;  
REPT. NO. FTD-MT-24-28-70  
PROJ: FTD-6030024

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED MACHINE TRANS. OF VSESOYUZNOE  
KHIMICHESKOE OBSHCHESTVO. ZHURNAL (USSR) V14 N4  
P432-437 1969, BY RAY E. ZARZA.

DESCRIPTORS: (\*AIR POLLUTION, \*WASTES(INDUSTRIAL)),  
(\*DUST, AIR POLLUTION), GAS FILTERS, ELECTROSTATIC  
PRECIPITATION, USSR (U)

IDENTIFIERS: \*AIR POLLUTION CONTROL EQUIPMENT,  
SCRUBBERS, TRANSLATIONS, CYCLONE SEPARATORS, \*DUST  
COLLECTORS, ELECTROSTATIC PRECIPITATORS (U)

THE ARTICLE DEALS WITH THE INDUSTRIAL PURIFICATION  
OF GASES IN ORDER TO DECREASE CONTAMINATION OF THE  
AIR, TO COLLECT VALUABLE PRODUCTS FROM GASES, AND TO  
REMOVE HARMFUL IMPURITIES FROM THEM. A BRIEF REVIEW  
IS PRESENTED OF THE NATURE AND SIZE OF PARTICLES TO  
BE REMOVED FROM THE GASES AND THE DETERMINATION OF  
EFFICIENCY OF DUST-CATCHING DEVICES. IN THE  
DISCUSSION DUST CATCHERS ARE BROKEN DOWN IN THE  
FOLLOWING GROUPS: (1) DRY OR MECHANICAL DUST  
CATCHERS; (2) WET DUST CATCHERS; (3) FILTERS;  
(4) ELECTRO-FILTERS. THE ARTICLE ENDS WITH A  
BRIEF NOTE CONCERNING THE EFFECTIVENESS OF COMBINED  
UNITS. THE ARTICLE CONTAINS A TABLE SHOWING THE  
TECHNICAL AND ECONOMIC INDICES OF THE MOST PREVALENT  
MODELS OF DUST CATCHERS. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 70A 141 4/2  
WEATHER WING (2ND) APO NEW YORK 09332

FORECASTING REDUCED VISIBILITIES DUE TO ATMOSPHERIC  
AEROSOLS. (U)

DESCRIPTIVE NOTE: TECHNICAL NOTE,  
JUN 70 7P WALTERSCHEID, RICHARD L. ;  
REPT. NO. 2WW-TN-70-2

UNCLASSIFIED REPORT

DESCRIPTORS: (\*WEATHER FORECASTING, AEROSOLS),  
ATMOSPHERES, CONDENSATION, DROPS, PARTICLES,  
MATHEMATICAL PREDICTION, HUMIDITY, FOG, HAZE,  
VISIBILITY, AIR FORCE OPERATIONS, MILITARY FACILITIES(U)  
IDENTIFIERS: GRAPHS(CHARTS) (U)

THE PROBLEM OF FORECASTING LOW VISIBILITIES HAS  
BECOME LESS A PROBLEM OF FORECASTING RESTRICTIONS  
OWING TO CONDENSED WATER DROPLETS BUT RATHER HAS  
BECOME MORE A PROBLEM OF FORECASTING LOW VISIBILITIES  
OWING TO SUSPENDED PARTICLES. THIS PAPER DISCUSSES  
A FORMULA AND GRAPH TO CALCULATE FORECAST VISIBILITY  
GIVEN INITIAL CONDITIONS OF VISIBILITY AND RELATIVE  
HUMIDITY. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 709 609

7/4

14/2

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ATMOSPHERIC SCIENCES LAB WHITE SANDS MISSILE RANGE N  
MEX

A NEW METHOD FOR DETECTING MICRON-SIZED SULFATE  
AND WATER-SOLUBLE PARTICLES AND ITS USAGE. (U)

DESCRIPTIVE NOTE: RESEARCH AND DEVELOPMENT TECHNICAL  
REPT.,

MAY 70

34P

RINEHART, GAYLE S. ;

PROJ: DA-1-T-061102-B-53-A

TASK: 1-T-061102-B-53-A-20

MONITOR: ECOM 5302

UNCLASSIFIED REPORT

DESCRIPTORS: (\*FOG, \*SULFATES), (\*NUCLEATION, FOG),  
(\*DETECTORS, \*AEROSOLS), PARTICLE SIZE, AMMONIUM  
COMPOUNDS, BARIUM COMPOUNDS, CHLORIDES, PHOTOMICROGRA(U)  
IDENTIFIERS: \*AMMONIUM SULFATE (U)

AN EASILY PREPARED, CHEMICALLY SENSITIVE SUBSTRATE  
FOR THE DETECTION OF SOLUBLE MICRON-SIZED ATMOSPHERIC  
SULFATE AND CERTAIN OTHER WATER-SOLUBLE PARTICLES,  
WITH A LIGHT MICROSCOPE, WAS DEVELOPED. THE  
SUBSTRATE IS MADE FROM AN AQUEOUS SOLUTION OF  
POLYVINYL ALCOHOL (PVA), BARIUM CHLORIDE, GLYCEROL,  
AND TRITON X-100 WHICH IS SPREAD ON A GLASS SLIDE  
AND DRIED. PARTICLES ARE COLLECTED ON THE SLIDE AND  
THEN OBSERVED UNDER A DARK FIELD OR PHASE CONTRAST  
OPTICAL MICROSCOPE. UNDER HUMID CONDITIONS, BARIUM  
CHLORIDE REACTS WITH SULFATE PARTICLES TO FORM PVA-  
INSOLUBLE BARIUM SULFATE. THIS PRECIPITATES IN A  
LIESFANG RING, WHILE NONSULFATE WATER-SOLUBLE  
COMPONENTS DISSOLVE INTO THE PVA MEDIUM.  
PHOTOMICROGRAPHY BEFORE AND AFTER MOISTURE  
TREATMENT REVEALS THE SULFATE AND SOLUBLE  
CONSTITUENTS OF THE PARTICULATE SAMPLE. THE METHOD  
CAN BE EMPLOYED TO DETECT SULFATE PARTICLES AS SMALL  
AS 0.3 MICRONS. THE NUMBER OF SOLUBLE PARTICLES AND  
PERCENT SULFATE COMPOSITION PER PARTICLE IN AEROSOL  
SAMPLES CAN BE ESTIMATED. COMPARISON OF SAMPLED  
ATMOSPHERIC AEROSOL SULFATE WEIGHT TO SULFATE WEIGHTS  
OF SIMILARLY UNPOLLUTED LOCATIONS SUPPORTS THE  
VALIDITY OF THE METHOD. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 711 116 4/2 13/2  
WASHINGTON UNIV SEATTLE COLL OF FOREST RESOURCES

DISPERSION OF AIR TRACERS INTO AND WITHIN A FORESTED  
AREA: 2. (U)

DESCRIPTIVE NOTE: RESEARCH AND DEVELOPMENT TECHNICAL  
REPT.,

JUN 70 333P FRITSCHEN, LEO J. ; DRIVER,  
CHARLES H. ; AVERY, CHARLES ; BUFFO, JOHN ;  
EDMONDS, ROBERT ;  
CONTRACT: DA-AMC-28-043-68-G8  
PROJ: DA-1-T-061102-B-53-A  
TASK: 1-T-061102-B-53-A-17  
MONITOR: ECOM TR-68-G8-2

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-700 974.

DESCRIPTORS: (\*AIR POLLUTION, TRACER STUDIES),  
(\*AEROSOLS, DIFFUSION), ATMOSPHERIC TEMPERATURE,  
FLUORESCENCE, POWDERS, DYES, SCATTERING, WIND, VELOCITY,  
MONITORS, FORESTRY (U)  
IDENTIFIERS: PLANT CANOPY (U)

DISPERSION OF FLUORESCENT POWDERS, DYES AND SPORES  
FROM A CLEARCUT AREA INTO AND WITHIN A 45-YEAR OLD  
DOUGLAS-FIR FOREST WAS STUDIED UNDER VARIOUS  
METEOROLOGICAL CONDITIONS. A TOTAL OF 111 ROTORODS  
SAMPLERS WERE USED TO TRAP THE TRACERS WITHIN A  
CANOPY VOLUME OF 20 M HEIGHT, 210 M WIDTH AND 270 M  
LENGTH. WIND SPEED, DIRECTION AND AIR TEMPERATURE  
WERE MONITORED ON FIVE TOWERS ON A LINE PERPENDICULAR  
TO THE FOREST WALL. TWENTY-FOUR MULTIPLE LOCATION  
RELEASES WERE MADE DURING 1968 AND 1969. PART I  
DESCRIBES THE EXPERIMENTAL SITE, PROCEDURES AND  
METHODS, PART II CONTAINS DATA COLLECTED AND  
PART III RESULTS, DISCUSSION AND CONCLUSIONS.  
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 712 722 13/2 6/6  
RAND CORP SANTA MONICA CALIF

FIFTY ENVIRONMENTAL PROBLEMS OF TIMELY IMPORTANCE,

(U)

SEP 70 71P LIBBY, L. M. ;  
REPT. NO. P-4415

UNCLASSIFIED REPORT

DESCRIPTORS: (\*ENVIRONMENT, CORRECTIONS), (\*AIR POLLUTION, REVIEWS), (\*WATER POLLUTION, REVIEWS), PROBLEM SOLVING, SUPERSONIC FLIGHT, DDT, URBAN PLANNING, RESPIRATORY DISEASES, RADIOACTIVE WASTES, CARBON DIOXIDE, DISPOSAL, WASTES(INDUSTRIAL), SEWAGE, LEAD(METAL), LAW, CLIMATE, HELIUM, TRANSPORTATION, ARCTIC REGIONS, MINING ENGINEERING, OCEANS, ECHINODERMATA, ICE FOG, CARBON MONOXIDE (U)  
IDENTIFIERS: WEATHER MODIFICATION, \*OILS, \*POLLUTION, PETROLEUM PIPELINES, SMOG, STARFISHES, STRIP MINING, \*THERMAL POLLUTION, DOMES(STRUCTURAL FORMS), \*ENVIRONMENTS, \*SURVEYS, EUTROPHICATION (U)

THE PAPER SURVEYS SOME OF THE MOST RECOGNIZABLE AND PRESSING PROBLEMS OF THE ENVIRONMENT, AND INCLUDES COMMENTS ON THEM FROM THE CURRENT LITERATURE. TOPICS INCLUDE SHORT ARTICLES ON POLLUTION INVOLVING SST AND STRATOSPHERIC AIR FORCE PLANES, HEAT, DDT, AIRPORTS, DESIGN OF SATELLITE-CITY SYSTEMS, RESPIRATORY DISEASES AND SMOG, RADIOACTIVE WASTE DISPOSAL METHODS, CONSTRUCTIVE USE OF GARBAGE, INDEMNITY PAYMENTS BY AIR POLLUTERS, PHOSPHORUS IN WASTE WATERS, CONSTRUCTIVE USE OF SEWAGE, BIOLOGIC EFFECTS OF LEAD, CLEAN-UP OF FUEL OIL, WEATHER MODIFICATION, OCEAN POLLUTION, REUSE OF GOLF COURSES, GRAVEYARDS, AND RAILROAD PROPERTIES, CITY SLUMS, RESOURCES OF CONTINENTAL SHELVES, HOT PIPELINE IN ARCTIC, LOS ANGELES AND EARTHQUAKES, WEATHER AND CO2, DOME OVER MANHATTAN, EXTERMINATION GENUS RATTUS, HELIUM, EUTROPHICATION, LAW FOR POLLUTION CONTROL, ATMOSPHERIC CO, STARFISH AND ITS CONTROL, OIL SPILLS, LOGGING, TUNDRA LANDS, AND ICE FOG. (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 712 989 4/1  
EDGEWOOD ARSENAL MD

SPECTRAL ABSORPTION CHARACTERISTICS OF THE MAJOR  
COMPONENTS OF DUST CLOUDS. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT. MAY 68-DEC 69,  
SEP 70 46P FLANIGAN, DENNIS F. ;  
DELONG, HARRY P. ;  
REPT. NO. EA-TR-4430  
PROJ: DA-1-C-622401-A-102  
TASK: 1-C-622401-A-10202

UNCLASSIFIED REPORT

DESCRIPTORS: (\*ATMOSPHERES, DUST), (\*DUST, LIGHT  
TRANSMISSION), (\*MINERALS, INFRARED SPECTROSCOPY),  
ABSORPTION SPECTRA, SOILS, CLAY MINERALS, CARBONATES,  
CALCIUM COMPOUNDS, INFRARED RADIATION, SILICATES,  
CLOUDS, SAMPLING (U)  
IDENTIFIERS: DUST CLOUDS (U)

IT IS WELL KNOWN THAT DUST CLOUDS SELECTIVELY  
ABSORB RADIATION IN THE 700 TO 1300/RECIPROCAL CM.  
ATMOSPHERIC WINDOW REGION. STUDIES HAVE SHOWN THAT  
DUST CLOUDS ARE COMPOSED OF THE SAME MINERALS AS  
SURFACE SOILS, ALTHOUGH IN DIFFERENT PROPORTION.  
SEVENTY SOIL SAMPLES WERE EXAMINED FROM A NUMBER OF  
LOCATIONS AROUND THE WORLD TO DETERMINE THEIR  
COMPOSITIONS AND SPECTRAL CHARACTERISTICS. THE  
RESULTS INDICATE THAT THERE ARE FIVE MAJOR COMPONENTS  
THAT SELECTIVELY ABSORB RADIATION IN THE 700 TO 1300/  
RECIPROCAL CM. REGION. THESE ARE THREE CLAY  
MINERALS, SILICA, AND CALCIUM CARBONATE.  
ABSORPTIVITY COEFFICIENT SPECTRA OF REPRESENTATIVE  
SOIL SAMPLES ARE GIVEN IN THE BODY OF THE REPORT, AND  
TRANSMISSION SPECTRA OF ALL SOIL SAMPLES ARE GIVEN IN  
THE APPENDIX. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 715 688 4/1 13/2  
AIR FORCE CAMBRIDGE RESEARCH LABS L G HANSCOM FIELD  
MASS

ATMOSPHERIC TURBIDITY AFTER THE AGUNG  
ERUPTION OF 1963 AND SIZE DISTRIBUTION OF THE  
VOLCANIC AEROSOL, (U)

JUN 70 10P VOLZ, FREDERICK E. ;  
REPT. NO. AFCRL-70-0644  
PROJ: AF-7621  
TASK: 762106

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN JNL OF GEOPHYSICAL  
RESEARCH V75 N27 P5185-5193, 20 SEP 70.  
SUPPLEMENTARY NOTE: REVISION OF REPORT DATED 13 MAR  
70.

DESCRIPTORS: (\*DUST, DISTRIBUTION), (\*AEROSOLS,  
\*STRATOSPHERE), (\*VOLCANOES, \*INDONESIA), PARTICLE SIZE,  
LIGHT TRANSMISSION, BRIGHTNESS, ATTENUATION, SOLAR  
RADIATION, OPTICAL PROPERTIES, TWILIGHT, INDONESIA (U)  
IDENTIFIERS: \*VOLCANIC ERUPTIONS (U)

DATA ON ATMOSPHERIC TRANSMISSION RELATED TO THE  
STRATOSPHERIC LAYER OF AEROSOL FROM THE EXPLOSION OF  
THE AGUNG VOLCANO IN MARCH 1963 AT BALI  
ISLAND ARE DISCUSSED. IN MIDLATITUDES OF THE  
SOUTHERN HEMISPHERE THE ABNORMAL AEROSOL OPTICAL  
THICKNESS AT LAMBDA 500 NM REACHED A PEAK OF 0.3  
DURING SEPTEMBER 1963 BUT BECAME VERY SMALL AFTER  
MAY-1965. SOME PYRHELIOMETRIC DATA REQUIRE  
CONSIDERATION OF THE LAMBDA DEPENDENCY OF ATTENUATION  
ON THE VOLCANIC DUST TO CONFORM TO SPECTRAL DATA.  
OVER THE NORTHERN HEMISPHERE, THE DECREASE OF  
TRANSMISSION DUE TO AGUNG AEROSOL WAS MARGINAL, AND  
A STRONG SEASONAL VARIATION THAT HAD BEEN DERIVED  
FROM PYRHELIOMETRIC DATA SEEMS QUESTIONABLE.  
OBSERVATIONS OF THE BRIGHTNESS OF THE ECLIPSED MOON  
AND ANALYSIS OF BRIGHTNESS OF THE UNBRO ARE IN GOOD  
AGREEMENT WITH THE ABOVE DATA IF REFERRED TO THE  
PROPER HEMISPHERE. INDICATIONS ON THE SIZE  
DISTRIBUTION OF THE VOLCANIC DUST FROM LAMBDA  
DEPENDENCE OF DUST ATTENUATION AND SKY LIGHT  
OBSERVATIONS ARE DISCUSSED. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 715 808 6/10

PUGET SOUND NAVAL SHIPYARD BREMERTON WASH INDUSTRIAL  
HYGIENE DIV

ASBESTOS EXPOSURE AND CONTROL AT PUGET  
SOUND NAVAL SHIPYARD,

(U)

MAR 70 51P MANGOLD, C. A. ; BECKETT, R.  
R. ; BESSMER, D. J. ;

UNCLASSIFIED REPORT

DESCRIPTORS: (\*INDUSTRIAL MEDICINE, \*ASBESTOS),  
RESPIRATORY SYSTEM, DUST, SILICON, PUBLIC HEALTH,  
EXPOSURE (PHYSIOLOGY), CONTROL, HAZARDS,  
THRESHOLDS (PHYSIOLOGY), SAFETY, STANDARDS  
IDENTIFIERS: \*OCCUPATIONAL DISEASES, \*ASBESTOSIS,  
\*INDOOR AIR POLLUTION, \*ENVIRONMENTAL ENGINEERING

(U)

(U)

A TWO AND ONE-HALF YEAR COMPARISON OF CHEST X-RAY  
FINDINGS IN THE TOTAL WORK FORCE OF PUGET SOUND  
NAVAL SHIPYARD SHOWS THAT 21% OF THE PIPE  
COVERERS AND INSULATORS HANDLING ASBESTOS HAVE  
PULMONARY ABNORMALITIES COMPARED TO 3.5% OF THE  
BOILERMAKERS WHO HAVE SOME EXPOSURE TO ASBESTOS AND  
SILICA, AND LESS THAN 1% OF THE CLERICAL WORKERS  
WITH NO KNOWN EXPOSURE TO INDUSTRIAL DUSTS.  
PULMONARY ABNORMALITIES HAVE REMAINED HIGH ALTHOUGH  
EVALUATION OF THE ASBESTOS DUST EXPOSURE OF PIPE  
COVERERS AND INSULATORS SHOWS THEIR TIME WEIGHTED  
EXPOSURES ARE BELOW THE CURRENT THRESHOLD LIMIT  
VALUE OF 5 MILLION PARTICLES PER CUBIC FOOT OF AIR.  
THE THRESHOLD LIMIT VALUE MAY BE TOO HIGH AND  
INTERMITTENT PEAK EXPOSURES MAY PLAY A GREATER ROLE  
THAN SUSPECTED. A NUMBER OF ENGINEERING CONTROL  
METHODS AND CHANGES IN WORK PRACTICES ARE SUGGESTED  
TO REDUCE ASBESTOS EXPOSURE. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 716 562 20/6 7/4 9/2  
PENNSYLVANIA STATE UNIV UNIVERSITY PARK MATERIALS RESEARCH  
LAB

COMPUTER ANALYSIS OF MULTI-CHANNEL SEM AND  
X-RAY IMAGES FROM FINE PARTICLES. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,  
DEC 70 94P WHITE, E. W.; MAYBERRY, K.  
; JOHNSON, G. G., JR;  
REPT. NO. TR-3  
CONTRACT: N00014-67-A-0385-0007  
PROJ: NR-032-502

UNCLASSIFIED REPORT

DESCRIPTORS: (\*ELECTRON MICROSCOPY, \*DATA PROCESSING),  
ALUMINA, ANALOG-TO-DIGITAL CONVERTERS, COMPUTER  
PROGRAMS, PATTERN RECOGNITION, DIGITAL RECORDING  
SYSTEMS, ELECTRON MICROSCOPES, AIR POLLUTION, DUST (U)  
IDENTIFIERS: ALUMINA, \*ELECTRON MICROSCOPY,  
\*ELECTRONIC SCANNERS, FORTRAN, FORTRAN 4 PROGRAMMING  
LANGUAGE, COMPUTERS, GRAPHICS, DATA PROCESSING (U)

TECHNIQUES INVOLVING THE COMPUTER PROCESSING OF  
SCANNING ELECTRON MICROSCOPE (SEM) IMAGES USING A  
BINARY CODED MAP APPROACH HAVE BEEN DEVELOPED. FOR  
EACH PICTURE FROM ONE TO SIX DIFFERENT SEM SIGNALS  
ARE CONVERTED FROM ANALOG TO DIGITAL FORM AND  
RECORDED ON MAGNETIC TAPE FOR SUBSEQUENT COMPUTER  
ANALYSIS. THE ANALYSIS OF FINE GRAINED A1203  
PARTICLES AND MULTIPHASE PARTICULATE MIXTURES ARE  
CARRIED THROUGH FROM THE SAMPLE PREPARATION, THE  
ACTUAL EXAMINATION UNDER THE SEM, THE DIGITAL  
RECORDING OF THE IMAGE AND FINALLY THE COMPUTER  
PROCESSING OF THE IMAGES. THE COMPUTER PROGRAM AND  
THE RESULTS ARE VIEWED STEP BY STEP - WITH AN  
EXPLANATION OF THE POSSIBILITIES. A LISTING OF THE  
ENTIRE COMPUTER PROGRAM IS GIVEN IN THE APPENDIX.  
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 716 999 4/1 13/2  
ATMOSPHERIC SCIENCES LAB WHITE SANDS MISSILE RANGE N  
MEX

SULFATES AND OTHER WATER SOLUBLES LARGER  
THAN 0.15 MICRONS RADIUS IN A CONTINENTAL  
NONURBAN ATMOSPHERE.

(U)

DESCRIPTIVE NOTE: RESEARCH AND DEVELOPMENT TECHNICAL  
REPT.,

OCT 70 35P RINEHART, GAYLE S. ;  
PROJ: DA-1-T-061102-B-53-A  
TASK: 1-T-061102-B-53-A-20  
MONITOR: ECOM 5336

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AIR POLLUTION, \*SULFATES), (\*HAZE,  
SULFATES), (\*ATMOSPHERIC CONDENSATION, SULFATES),  
AEROSOLS, PARTICLE SIZE, PARTICLES, SAMPLERS,  
MICROSCOPY, TEST METHODS

(U)

IDENTIFIERS: \*AIR POLLUTION DETECTION, IMPACTORS,  
CONDENSATION NUCLEI

(U)

NUMBER CONCENTRATIONS OF LARGE AND GIANT  
ATMOSPHERIC PARTICLES AND PARTICLES CONTAINING  
SULFATE AND WATER-SOLUBLE CONSTITUENTS WERE  
DETERMINED. PARTICLES WERE COLLECTED BY MEANS OF  
AN ANDERSEN MULTISTAGE IMPACTOR AND EXAMINED BY  
MEANS OF AN OPTICAL MICROSCOPE. THE NUMBER OF  
PARTICLES COLLECTED AND CONCENTRATION OF SULFATE AND  
WATER-SOLUBLE PARTICLES AT THE ISOLATED NEW  
MEXICO SAMPLING SITE WERE COMPARABLE TO LITERATURE-  
CITED VALUES OF AVERAGE CONTINENTAL CONCENTRATIONS  
OVER MOUNTAINS OR UNPOLLUTED AREAS. THE NUMBER  
CONCENTRATIONS OF GIANT AND LARGE PARTICLES DID NOT  
APPEAR TO BE INFLUENCED IN THE SAME WAY BY  
METEOROLOGICAL PARAMETERS. INCREASES IN THE NUMBER  
OF LARGE PARTICLES WERE MIRRORED BY CORRESPONDING  
INCREASES IN SULFATE CONTENT. DATA FOR RELATING  
ANDERSEN SAMPLER AEROSOL NUMBER CONCENTRATIONS TO  
CONCENTRATIONS REFLECTED BY THE ROYCO 202 LIGHT  
SCATTERING AEROSOL COUNTER ARE GIVEN. (AUTHOR)

(U)

AD-A044 150

DEFENSE DOCUMENTATION CENTER ALEXANDRIA VA  
ENVIRONMENTAL POLLUTION: AIR POLLUTION - PARTICULATE MATTERS. (U)  
AUG 77

F/G 13/2

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DDC/BIB-77/10

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A044150





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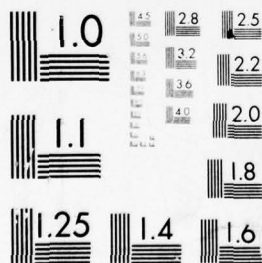
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A044150



MICROCOPY RESOLUTION TEST CHART  
NATIONAL BUREAU OF STANDARDS-1963-A

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 718 527 4/2

NATIONAL CENTER FOR ATMOSPHERIC RESEARCH BOULDER COLO

CIRRUS CLOUDS AS COLLECTORS OF AEROSOL  
PARTICLES, (U)

FFB 70 14P ROSINSKI, J. ; NAGAM, C.  
T. ; LANGER, G. ; PARUNGO, F. P. ;

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN JNL. OF GEOPHYSICAL  
RESEARCH, V75 N15 P2961-2973, 20 MAY 70. NO COPIES  
FURNISHED.

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH EG AND  
G, INC., BOULDER, COLO. PUB. AS ISTITUTO DI  
FISICA DELL'ATMOSFERA IFA-PV-38. REVISION OF  
REPORT DATED 14 OCT 69.

DESCRIPTORS: (\*CIRRUS CLOUDS, AEROSOLS); (\*AEROSOLS,  
COLLECTING METHODS); PARTICLES, ICE,  
CONVECTION(ATMOSPHERIC); THUNDERSTORMS, NUCLEATION,  
THERMAL PROPERTIES, PHASE STUDIES, PARTICLE SIZE,  
SPHERES, RAINFALL, MAGNETIC PROPERTIES, CALCIUM  
COMPOUNDS, SODIUM COMPOUNDS, IRON COMPOUNDS, NICKEL  
COMPOUNDS, COLORADO (U)

WATER-INSOLUBLE AEROSOL PARTICLES LARGER THAN 2  
MICROMETERS DIAMETER IN CIRRUS AND OTHER TYPES OF  
ICED CLOUDS WERE STUDIED ACCORDING TO THREE  
CLASSES: NONMAGNETIC PARTICLES, NONSPHERICAL  
MAGNETIC PARTICLES, AND MAGNETIC SPHERULES.  
ALTHOUGH THE CONCENTRATIONS OF PARTICLES VARIED  
CONSIDERABLY WITHIN THE CLOUD, GENERALLY SIMILAR SIZE  
DISTRIBUTIONS WERE FOUND FOR ALL THREE CLASSES AT  
VARIOUS LOCATIONS WITHIN A CLOUD. PARTICLE  
CONCENTRATION GENERALLY DECREASED WITH INCREASING  
PARTICLE SIZE. THE DIFFERENT SIZE DISTRIBUTION OF  
MAGNETIC SPHERULES FOUND ON SOME OCCASIONS INDICATES  
THAT THEIR ORIGIN DIFFERS FROM THAT OF OTHER CLASSES.  
FOR FURTHER STUDY, MAGNETIC SPHERULES WERE DIVIDED  
INTO FOUR SUBCLASSES ACCORDING TO SHAPE (SPHERICAL  
AND OBLONG) AND SURFACE TEXTURE (SMOOTH AND  
ROUGH). THOUGH THE AVERAGE ABUNDANCE OF EACH  
SUBCLASS OF SPHERULES PRESENT IN CIRRUS IS SIMILAR TO  
THAT IN AIR, VERY LARGE DIFFERENCES MAY OCCUR ON SOME  
OCCASIONS. CHEMICAL DETERMINATIONS OF CA, NA,  
FE, AND NI WERE MADE FOR THE NONMAGNETIC (NM)  
AND MAGNETIC (M) PARTICLES. NICKEL WAS FOUND  
IN ONLY 4 OF 32 SAMPLES. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 718 613 13/2 11/6  
ARMY NATICK LABS MASS EARTH SCIENCES LAB

BIBLIOGRAPHY ON ATMOSPHERIC (CYCLIC) SEA-  
SALTS.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,  
APR 70 78P BRIERLY, WILLIAM B. I  
REPT. NO. ES-57  
PROJ: DA-1-T-061101-A-914  
MONITOR: USA-NLABS TR-70-63-ES

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AIR POLLUTION, SALTS), (\*BIBLIOGRAPHIES,  
AIR POLLUTION), (\*AEROSOLS, DISTRIBUTION), (\*SALTS,  
CORROSION), (\*ATMOSPHERES, SALTS), LAKES, OCEANS,  
RIVERS, CORROSION INHIBITION, INTERACTIONS, ATMOSPHERIC  
MOTION, UPPER ATMOSPHERE, CHEMICAL PROPERTIES,  
ATMOSPHERIC PRECIPITATION, INDEXES (U)  
IDENTIFIERS: AIR WATER INTERACTIONS (U)

THE BIBLIOGRAPHY PROVIDES MORE THAN 600 REFERENCES  
COVERING ALL PHASES OF THE SEA-SALT CYCLE: THE  
ORIGIN OF THE PARTICLES IN SALT LAKES, PLAYAS, AND  
OCEANS; THE PROCESSES BY WHICH THE SALT PARTICLES ARE  
JETTED INTO THE AIR FROM SEA AND LAKE SURFACES BY  
BURSTING BUBBLES, THEIR TRANSPORT INLAND OVER THE  
CONTINENTAL LANDMASSES, THEIR IMPINGEMENT,  
INCRUSTMENT, AND FALLOUT EITHER AS DRY SALT PARTICLES  
OR IN VARIOUS FORMS OF PRECIPITATION, AND THEIR  
EVENTUAL RETURN IN RIVERS TO THE SEA. SELECTED  
REFERENCES ARE ALSO INCLUDED ON THE HISTORIC  
DEVELOPMENT OF THE SUBJECT, METHODS OF CHEMICAL  
ANALYSIS, AND TECHNIQUES OF INSTRUMENTATION AND  
EXPERIMENTAL RESEARCH LEADING TO THE FORMULATION OF  
CURRENT THEORIES AND POSTULATIONS. AN INDEX TO  
SUBJECTS IS INCLUDED SO THAT THE READER MAY QUICKLY  
LOCATE REFERENCES PERTAINING TO HIS IMMEDIATE  
INTEREST. MOST OF THE CURRENT METEOROLOGICAL AND  
GEOPHYSICAL JOURNALS AS WELL AS OBSCURE SOURCES OF  
WORLD-WIDE SCOPE HAVE BEEN USED IN THIS COMPILATION.  
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 718 791 1/5 14/2  
ARMY TEST AND EVALUATION COMMAND ABERDEEN PROVING GROUND  
MD

DUST CONTROL MATERIAL. (U)

DESCRIPTIVE NOTE: MATERIEL TEST PROCEDURE.

DEC 70 22P

REPT. NO. MTP-9-2-285(K)

UNCLASSIFIED REPORT

DESCRIPTORS: (\*ARMY EQUIPMENT, TEST METHODS), (\*LANDING  
FIELDS, DUST), TAR, ASPHALT, POLYESTER PLASTICS (U)  
IDENTIFIERS: \*COMMODITY ENGINEERING TEST  
PROCEDURES (U)

THE ARMY ENGINEERING TEST PROCEDURE  
DESCRIBES TEST METHODOLOGY AND TESTING TECHNIQUES TO  
DETERMINE THE TECHNICAL PERFORMANCE AND SAFETY  
CHARACTERISTICS OF DUST CONTROL MATERIAL AND  
ASSOCIATED TOOLS AND EQUIPMENT. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 718 966 4/2 13/2  
AIR WEATHER SERVICE SCOTT AFB ILL

INTERIM INSTRUCTIONS FOR THE USE OF THE  
NATIONAL METEOROLOGICAL CENTER AIR  
POLLUTION POTENTIAL (APP) PRODUCTS. (U)

DESCRIPTIVE NOTE: TECHNICAL NOTE,  
FFB 71 25P DESCAMPS, VALENTINE J. ;  
MONITOR: USAFETAC TN-71-1

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AIR POLLUTION, \*WEATHER FORECASTING),  
INSTRUCTION MANUALS, METEOROLOGICAL PHENOMENA,  
TEMPERATURE INVERSION, ATMOSPHERIC MOTION, WEATHER  
COMMUNICATIONS, TELETYPE SYSTEMS, WIND (U)  
IDENTIFIERS: \*AIR POLLUTION FORECASTS (U)

THE REPORT FURNISHES INTERIM INSTRUCTIONS AND  
GUIDANCE TO AIR WEATHER SERVICE (AWS)  
PERSONNEL IN THE UNDERSTANDING AND USE OF THE  
NATIONAL METEOROLOGICAL CENTER (NMC) AIR  
POLLUTION POTENTIAL PRODUCTS. THE NMC  
PRODUCTS ARE BEING TRANSMITTED OVER COMET III  
CIRCUITRY AND FOFAX TO THE AWS DETACHMENTS FOR  
THEIR USE IN PROVIDING GUIDANCE TO BASE POLLUTION  
CONTROL OFFICERS. THE REPORT FURNISHES  
EXPLANATION OF TERMS, APPLICATION OF THE MESSAGES TO  
FORECAST PREPARATION, AND GUIDELINES FOR USE IN  
TAILORING THE GENERAL INFORMATION FURNISHED BY NMC  
TO LOCAL INSTALLATION REQUIREMENTS. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 722 538 4/1 20/6  
MAINZ UNIV (WEST GERMANY) METEOROLOGISCH-GEOPHYSIKALISCHES  
INSTITUT

RESEARCH ON ATMOSPHERIC OPTICAL RADIATION  
TRANSMISSION.

(U)

DESCRIPTIVE NOTE: SCIENTIFIC REPT. NO. 1, 1 JAN 69-31  
DEC 70,

JAN 71 91P EIDEN, REINER ; ESCHELBACH,  
GUENTER ; HAENEL, GOTTFRIED ; BULLRICH, KURT ;  
CONTRACT: F61052-69-C-0016  
PROJ: AF-7621  
TASK: 762103  
MONITOR: AFCRL 71-0184

UNCLASSIFIED REPORT

DESCRIPTORS: (\*ATMOSPHERES, \*LIGHT TRANSMISSION),  
TURBULENCE, HUMIDITY, ABSORPTION, SCATTERING,  
REFLECTION, THERMAL RADIATION, AEROSOLS, AIR POLLUTION,  
POLARIZATION, REFRACTIVE INDEX, VISIBILITY, WEST  
GERMANY (U)  
IDENTIFIERS: ATMOSPHERES, ATTENUATION, ATMOSPHERIC  
RADIATION (U)

THE REPORT DISCUSSES THE FOLLOWING ITEMS: A  
DIRECT METHOD FOR THE INTEGRATION OF THE EQUATION OF  
RADIATIVE TRANSFER IN A TURBID ATMOSPHERE;  
DETERMINATION OF THE COMPLEX INDEX OF REFRACTION OF  
SPHERICAL AEROSOL PARTICLES OPTIMAL INFORMATION IS  
OBTAINED OF THE LIGHT SCATTERED BY ANALYSING THE  
DEGREE OF POLARIZATION, THE ELLIPTICITY AND THE ANGLE  
OF ORIENTATION OF THE ELLIPSE OF THE FIELD VECTOR;  
NEW RESULTS ON VISUAL RANGE AS FUNCTION OF RELATIVE  
HUMIDITY HAVE INDICATED THAT THERE EXISTS A SIMPLE  
RELATION BETWEEN THE CHANGE IN VISUAL RANGE AND  
CHANGE OF PARTICLE RADIUS; AND, CALCULATIONS OF THE  
SPECTRAL EXTINCTION COEFFICIENT OF ATMOSPHERIC  
AEROSOL PARTICLES WITH DIFFERENT COMPLEX REFRACTIVE  
INDICES. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 724 104 13/2 4/2  
AIR FORCE CAMBRIDGE RESEARCH LABS L G HANSCOM FIELD  
MASS

ON THE THEORY OF ATMOSPHERIC DIFFUSION IN  
FOG CONDITIONS,

(U)

MAR 71 21P BERLIAND, M. E. ; ONIKUL, R.  
I. ; RYABOVA, G. V. ;  
REPT. NO. AFCRL-71-0268, AFCRL-TRANS-91

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF GLAVNAYA GEOFIZICHESKAYA  
OBSERVATORIYA, LENINGRAD. TRUDY (USSR) N207 P3-13  
1968.

DESCRIPTORS: (\*AIR POLLUTION, FOG), (\*FOG, \*ATMOSPHERIC  
MOTION), DIFFUSION, GASES, SMOKE, VISIBILITY, RIVERS,  
CONDENSATION, MOISTURE, SOLUBILITY, DIFFERENTIAL  
EQUATIONS, USSR (U)  
IDENTIFIERS: ATMOSPHERIC DENSITY, DIFFUSION,  
TRANSLATIONS (U)

STUDY OF CASES OF INTENSE AIR POLLUTION SHOWS THAT  
A PART OF THEM IS RELATED TO PERIODS OF EXTENDED  
FOGS. THE HARMFUL EFFECT OF SMOKE AND GASEOUS  
ADMIXTURES IS REVEALED MORE SHARPLY IN FOG THAN IN  
OTHER WEATHER CONDITIONS: AN UNPLEASANT FEELING  
FROM THEM IS INCREASED, THE PRESENCE OF ADMIXTURES IN  
FOGS FURTHERMORE DECREASES THE VISIBILITY, ETC. ONE  
NOTES A REVERSE EFFECT WHEN THE PRESENCE OF SMOKE  
CONTRIBUTES TO THE CONDENSATION OF THE ATMOSPHERIC  
MOISTURE. IN THIS MANNER, A MUTUALLY INCREASING  
EFFECT OF SMOKE AND FOGS OCCURS. THE REPORT  
PRESENTS THE ESTIMATES OF THE INFLUENCE OF RIVER FOGS  
(THE THEORY OF WHICH IS DEVELOPED BY BERLIAND AND  
ONIKUL, ON THE DISTRIBUTION OF GASEOUS ADMIXTURES.  
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 724 610 4/2 13/2  
ATMOSPHERIC SCIENCES LAB WHITE SANDS MISSILE RANGE N  
MEX

EVIDENCE FOR SULFATE AS A MAJOR CONDENSATION  
NUCLEUS CONSTITUENT IN NONURBAN FOG. (U)

DESCRIPTIVE NOTE: RESEARCH AND DEVELOPMENT TECHNICAL  
REPT.,

MAR 71 33P RINEHART, GAYLE S. ;  
PROJ: DA-1-T-061102-B-53-A  
TASK: 1-T-061102-B-53-A-20  
MONITOR: ECOM 5366

UNCLASSIFIED REPORT

DESCRIPTORS: (\*FOG, SOURCES), (\*AIR POLLUTION, NEW  
MEXICO), (\*AEROSOLS, SULFATES), CONDENSATION, PARTICLES,  
CLOUD COVER, GUIDED MISSILE RANGES (U)  
IDENTIFIERS: WHITE SANDS MISSILE RANGE, WEATHER  
MODIFICATION, CONDENSATION NUCLEI (U)

TO LEARN MORE ABOUT POTENTIAL FOG CONDENSATION  
NUCLEI CONTENT, 71 ANDERSON SAMPLER PARTICULATE  
SAMPLES FROM THE WHITE SANDS MISSILE RANGE,  
NEW MEXICO AREA WERE EXAMINED. DURING A PORTION  
OF THE SAMPLING PERIOD, FROM SEPTEMBER TO  
DECEMBER, 1969, THE ROYCO LIGHT SCATTERING  
COUNTER WAS EMPLOYED SIMULTANEOUSLY. SULFATES  
APPEARED TO ACCOUNT FOR MOST OF THE SOLUBLE AND THUS  
POTENTIAL CONDENSATION NUCLEI. MOISTURE WAS AN  
IMPORTANT POSITIVE INFLUENCE ON THE NUMBER OF THESE  
PARTICLES; WIND SPEED DECREASED THEIR NUMBER. IN  
GENERAL, THE NUMBER OF LARGE AND GIANT PARTICLES  
REMAINED CONSTANT THROUGHOUT THE DAY. DAYTIME  
FLUCTUATIONS WERE ATTRIBUTED TO INCURSIONS OF FOREIGN  
AIR MASSES OR TO RAIN WASHOUT. IT IS CONCLUDED THAT  
THE SULFATE ION IS SUFFICIENTLY ABUNDANT IN THIS AND  
OTHER NONURBAN AREAS TO BE A DOMINANT CONSTITUENT IN  
CLOUD AND FOG CONDENSATION NUCLEI. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 724 795 4/2 13/2  
NORTH CAROLINA UNIV CHAPEL HILL DEPT OF ENVIRONMENTAL  
SCIENCES AND ENGINEERING

ORGANIC MATTER IN MARITIME LIGHT-SCATTERING  
AEROSOLS.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,

MAR 71 92P RIPPERTON, LYMAN A. ;

JEFFRIES, HARVEY E. ;

REPT. NO. ESE-PUB-261

CONTRACT: N62306-69-C-0383

MONITOR: NWRP A2-0471-160

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MARINE METEOROLOGY, ATLANTIC OCEAN),  
(\*AEROSOLS, ORGANIC MATERIALS), (\*AIR POLLUTION, \*VIRGIN  
ISLANDS), PARTICLES, LIGHT TRANSMISSION, VISIBILITY,  
DETECTORS, REGRESSION ANALYSIS, CLOUD COVER, SAMPLING (U)  
IDENTIFIERS: SEA STATES (U)

SAMPLES OF MARITIME LIGHT-SCATTERING AEROSOLS TAKEN  
AT SEA IN THE VICINITY OF THE VIRGIN ISLANDS IN  
APRIL, JULY AND SEPTEMBER OF 1970 PROVED TO  
CONTAIN 35% ORGANIC MATERIAL, SHOWED LITTLE  
RESPONSE TO CHANGES IN HUMIDITY, AND GAVE EVIDENCE OF  
CONTAINING THE ORGANIC FRACTION OF THE AEROSOL AS A  
PROTECTIVE COATING ON THE REST OF THE PARTICULATE  
MATERIAL. THERE WAS A SIGNIFICANT DIFFERENCE IN THE  
DATA TAKEN IN THE DIFFERENT MONTHS WHICH MAY INDICATE  
A SEASONAL DIFFERENCE. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 725 798 4/1 8/7  
AIR FORCE CAMBRIDGE RESEARCH LABS L G HANSCOM FIELD  
MASS

RECENT VOLCANISM AND THE STRATOSPHERE. (U)

MAR 71 5P CRONIN, JOHN F. ;  
REPT. NO. AFCRL-71-0341  
PROJ: AF-7628  
TASK: 762805

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN SCIENCE, V172 P847-849, 21  
MAY 71.

SUPPLEMENTARY NOTE: REVISION OF REPORT DATED 5 JAN  
71.

DESCRIPTORS: (\*STRATOSPHERE, DUST), (\*VOLCANOES, AIR  
POLLUTION), TROPOPAUSE, WATER VAPOR, ALASKA, ICELAND,  
INDONESIA (U)  
IDENTIFIERS: MOUNT AGUNG (U)

IN THE QUIET YEARS AFTER THE 1956 ERUPTION OF THE  
BEZMYANNY VOLCANO IN CENTRAL KAMCHATKA, IT IS  
DOUBTFUL THAT ANY VOLCANO VENTED INTO THE  
STRATOSPHERE UNTIL THE 1963 ERUPTIONS OF AGUNG  
(BALI), TRIDENT (ALASKA), AND SURTSEY  
(ICELAND). FROM 1963 TO THE HEKLA  
(ICELAND) EVENT IN MAY 1970, TWO LATITUDINAL  
BELTS OF VOLCANOES HAVE EJECTED ASH AND GASES INTO  
THE STRATOSPHERE. ONE BELT IS EQUATORIAL AND THE  
OTHER IS JUST BELOW THE ARCTIC CIRCLE. THE  
LATTER, WHERE THE TROPOPAUSE IS CONSIDERABLY LOWER,  
MAY HAVE BEEN THE PRINCIPAL SOURCE OF REPLENISHMENT  
OF VOLCANIC DUST AND GASES TO THE STRATOSPHERE.  
SUBMARINE AND PHREATIC VOLCANIC ERUPTIONS MAY HAVE  
BEEN THE SOURCE OF REPORTED INCREASE OF WATER VAPOR  
IN THE STRATOSPHERE. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 726 249 13/2  
IIT RESEARCH INST CHICAGO ILL

STUDY OF VISIBLE EXHAUST SMOKE FROM  
AIRCRAFT JET ENGINES.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
JUN 71 68P STOCKHAM, JOHN ; RETZ, HOWARD ;  
CONTRACT: DOT-FA69WA-2208  
MONITOR: FAA-NA, FAA-RD 71-24, 71-22

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AIR POLLUTION, EXHAUST GASES), (\*AIRCRAFT  
ENGINES, AIR POLLUTION), (\*JET ENGINES, AIR POLLUTION),  
(\*EXHAUST GASES, VISIBILITY), PARTICLES, PHOTOGRAPHY,  
MATHEMATICAL MODELS, LIGHT TRANSMISSION, SCATTERING,  
TURBOJET ENGINES (U)  
IDENTIFIERS: LIGHT SCATTERING, \*SMOKE NUMBER, SMOKE,  
\*JET ENGINE EXHAUST (U)

THE OBJECTIVE OF THIS STUDY WAS TO RELATE THE  
VISIBILITY OF INFLIGHT JET EXHAUST TO THE SAE SMOKE  
NUMBER. A METHOD BASED ON PHOTOGRAPHIC PHOTOMETRY  
WAS DEVELOPED FOR MEASURING THE OPTICAL DENSITY OF  
SMOKE PLUMES. THIS METHOD WAS RELATED TO  
VISIBILITY AND TO THE SMOKE NUMBER THROUGH  
TRANSMISSOMETER MEASUREMENTS AND VISIBILITY THEORY.  
A PORTABLE TRANSMISSOMETER, CAPABLE OF OPERATING  
OVER A WIDE RANGE OF OPTICAL PATH LENGTHS AND UNDER  
VARYING AMBIENT LIGHT CONDITIONS WAS FABRICATED FOR  
USE ON THIS STUDY. THE MATHEMATICAL EXPRESSION  
RELATING THE TRANSMISSION MEASUREMENTS TO THE SMOKE  
NUMBER WAS DERIVED. LIMINAL VISIBILITY  
REQUIREMENTS OF SMOKE TRAILS, DEVELOPED FROM LIGHT  
SCATTERING THEORY, CORRELATED WITH ACTUAL VISUAL  
OBSERVATIONS AND THE TRANSMISSOMETER AND PHOTOMETRY  
MEASUREMENTS. TEST RESULTS, WITH THE ENGINES  
INVESTIGATED, INDICATE THAT SAE SMOKE NUMBERS BELOW  
23 WERE ASSOCIATED WITH INVISIBLE EXHAUST PLUMES.  
SAMPLES OF THE EXHAUST SMOKE SHOWED THE PARTICLES  
TO BE COMPOSED OF LACY AGGLOMERATES. AT THE  
NOZZLE, THE GEOMETRIC MEDIAN PARTICLE DIAMETER WAS  
0.052 MICROMETERS. AT A DISTANCE OF 10 NOZZLE  
DIAMETERS THE GEOMETRIC MEDIAN PARTICLE DIAMETER WAS  
0.13 MICROMETER AT CRUISE CONDITION. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 726 984 4/2 13/2  
AIR WEATHER SERVICE SCOTT AFB ILL

GUIDE TO LOCAL DIFFUSION OF AIR  
POLLUTANTS.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,  
MAY 71 86P BEALS, GORDON A. ;  
REPT. NO. AWS-TR-214

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AIR POLLUTION, \*ATMOSPHERIC MOTION),  
MICROMETEOROLOGY, WIND, DIFFUSION, MATHEMATICAL MODELS,  
STATISTICAL PROCESSES, TRACER STUDIES, DYES, GASES,  
WEATHER FORECASTING, INSTRUCTION MANUALS (U)

THE REPORT IS INTENDED AS A GUIDE ON LOCAL AIR  
POLLUTION FOR FORECASTERS WHO HAVE HAD NO PRIOR  
EXPERIENCE WITH DIFFUSION. CERTAIN FUNDAMENTALS OF  
MICROMETEOROLOGY AND DIFFUSION IN THE LOWER LAYERS  
ARE EXPOUNDED AND THEIR RELATION TO THE DETERMINATION  
OF AIR POLLUTANT DISPERSION AND CONCENTRATION AMOUNTS  
IS EXPLAINED. CALCULATIONS OF POLLUTANT  
CONCENTRATIONS USING ACCEPTED TECHNIQUES ARE  
SYSTEMATICALLY DISCUSSED AND SOLUTION OF ACTUAL AIR  
POLLUTION PROBLEMS ARE SHOWN IN THE APPENDIX.  
GRAPHS AND NOMOGRAMS USED IN SOLVING AIR POLLUTION  
PROBLEMS ARE ALSO FURNISHED IN THE APPENDIX.  
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 726 999 13/2 21/8.2 21/2  
AIR FORCE ROCKET PROPULSION LAB EDWARDS AFB CALIF

ATMOSPHERIC DIFFUSION OF BERYLLIUM (PROJECT  
ADOBF).

(U)

DESCRIPTIVE NOTE: FINAL REPT. 1 APR 64-1 NOV 67,  
JUL 71 116P TUCKER, GORDON L. MALONE,  
HUGH E. SMITH, ROBERT W. ;  
REPT. NO. AFRPL-TR-70-65-VOL-1  
PROJ: AF-305999099, AF-305907024

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AIR POLLUTION, BERYLLIUM), (\*BERYLLIUM,  
DIFFUSION), (\*ROCKET ENGINES, PROPELLANTS), EXHAUST  
GASES, CLOUDS, TRACKING, CHEMICAL ANALYSIS, TEST  
EQUIPMENT, TEST METHODS (U)  
IDENTIFIERS: ADOBE (ATMOSPHERE DIFFUSION OF BERYLLIUM),  
ADOBE PROJECT, ATMOSPHERIC DENSITY, DIFFUSION (U)

A FIELD STUDY OF EXHAUST CLOUD DIFFUSION FROM SOLID  
ROCKET MOTORS WAS CONDUCTED AT THE AIR FORCE  
ROCKET PROPULSION LABORATORY. THE OBJECTIVE  
OF THE PROGRAM WAS TO CORRELATE THE DIFFUSION OF  
ROCKET MOTOR EXHAUST CLOUDS WITH MEASURABLE  
METEOROLOGICAL VARIABLES UNDER BOTH STABLE AND  
UNSTABLE ATMOSPHERIC CONDITIONS. FIFTY-SEVEN SETS  
OF FIELD DATA WERE COLLECTED FROM 250 TO 350 AIR  
SAMPLERS PER TEST USING SOLID ROCKET MOTORS RANGING  
FROM 100 TO 4000 POUNDS OF PROPELLANT CONTAINING  
BERYLLIUM. THE WORK IS PRESENTED IN THREE VOLUMES.  
VOLUME I DESCRIBES THE DIFFUSION EXPERIMENT, THE  
CHEMICAL ANALYSIS PROGRAM, THE BIOENVIRONMENTAL  
SAFETY PROGRAM, AND DISCUSSES THE DATA ANALYSIS AND  
THE RESULTING DIFFUSION EQUATIONS FROM HOT  
INSTANTANEOUS SOURCES. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 728 411 18/8 18/7 18/3  
TELEDYNE ISOTOPES WESTWOOD N J

PROJECT STARDUST, VOLUME II, CHAPTERS 7 AND  
8.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,

MAR 71 205P FEELY, HERBERT W. ; TRAUTMAN,  
MILTON ;

REPT. NO. IWL-0001-143-VOL-2

CONTRACT: DA-49-146-X2-079, ARPA ORDER-0172

MONITOR: DASA 2166-2

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 1, AD-850 378L,  
AND VOLUME 3, AD-728 412.

DESCRIPTORS: (\*RADIOACTIVE FALLOUT, SAMPLING), (\*FISSION  
PRODUCT ACTIVITY, INTENSITY), (\*NUCLEAR EXPLOSIONS,  
RADIOACTIVE FALLOUT), AEROSOLS, STRATOSPHERE, UPPER  
ATMOSPHERE, AIR POLLUTION, RADIOACTIVE DECAY,  
RADIOACTIVE ISOTOPES

(U)

IDENTIFIERS: STAR DUST PROJECT

(U)

IN THIS, THE FINAL REPORT OF PROJECT STARDUST,  
A REVIEW IS GIVEN OF THE RESULTS OF ANALYSES OF  
FILTER AND GAS SAMPLES COLLECTED DURING THE COURSE OF  
THE PROGRAM, 1961 TO 1967, AND A SUMMARY IS GIVEN OF  
THE CONCLUSIONS REACHED ON THE BASIS OF THESE RESULTS  
CONCERNING THE INFLUENCE OF ATMOSPHERIC PROCESSES ON  
THE TRANSFER AND FALLOUT OF RADIOACTIVE MATERIALS  
INJECTED INTO THE STRATOSPHERE. REFERENCE IS MADE  
TO RESULTS OBTAINED DURING PROJECT HASP ALSO, FOR  
IN MANY WAYS, PROJECT STARDUST WAS A CONTINUATION  
OF THAT PROGRAM. (AUTHOR)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 728 412 18/8 18/7 18/3  
TELEDYNE ISOTOPES WESTWOOD N J

PROJECT STARDUST, VOLUME III, CHAPTERS 9 TO  
13.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,

MAR 71 218P FEELY, HERBERT W. ; FRIEND,  
JAMES P. ; SEITZ, HAROLD ; MARTIN, JOHN D. ;  
ERLERACH, WOODLAND F. ;  
REPT. NO. IWL-0001-143-VOL-3  
CONTRACT: DA-49-146-X7-079, ARPA ORDER-0172  
MONITOR: DASA 2166-3

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 2, AD-728 411, AND  
VOLUME 1, AD-850 378L.

DESCRIPTORS: (\*RADIOACTIVE FALLOUT, SAMPLING), (\*FISSION  
PRODUCT ACTIVITY, INTENSITY), (\*NUCLEAR EXPLOSIONS,  
RADIOACTIVE FALLOUT), AEROSOLS, STRATOSPHERE, UPPER  
ATMOSPHERE, AIR POLLUTION, RADIOACTIVE DECAY,  
RADIOACTIVE ISOTOPES, TRANSPORT PROPERTIES, MATHEMATICAL  
MODELS, PARTIAL DIFFERENTIAL EQUATIONS, NUMERICAL  
ANALYSIS, PLUTONIUM (U)

IDENTIFIERS: PLUTONIUM 238, SNAP, STAR DUST  
PROJECT (U)

CONTENTS: THE STRATOSPHERIC TRANSPORT OF  
PLUTONIUM-238 FROM THE APRIL 1964 SNA:-9A  
BURNUP; STRATOSPHERIC DISTRIBUTION OF COSMIC RAY  
ACTIVITY; THE DISTRIBUTION OF LEAD-210 AND  
POLONIUM-210 IN THE STRATOSPHERE; STRATOSPHERIC  
METEOROLOGICAL PROCESSES, MODELS AND DATA FROM  
PROJECT STARDUST; THE STARDUST NUMERICAL MODEL OF  
TRANSFER AND RAINOUT OF STRATOSPHERIC RADIOACTIVE  
MATERIALS. (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 729 413 13/2

CALIFORNIA UNIV BERKELEY OPERATIONS RESEARCH CENTER

AVERAGING TIME AND MAXIMA FOR AIR POLLUTION  
CONCENTRATIONS.

(U)

DESCRIPTIVE NOTE: RESEARCH REPT.,

JUL 71 21P BARLOW, RICHARD E. ;

REPT. NO. OPC-71-17

CONTRACT: N00014-69-A-0200-1036, NSF-GP-29123

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SPONSORED IN PART BY GRANT NSF-  
GP-23153.

DESCRIPTORS: (\*AIR POLLUTION, \*DISTRIBUTION FUNCTIONS),

STATISTICAL ANALYSIS, CONCENTRATION(CHEMISTRY),

MATHEMATICAL ANALYSIS, THEORY, PARTICLES

(U)

IDENTIFIERS: ARITHMETIC MEAN, AVERAGE

(U)

FOR PURPOSES OF EVALUATING AIR QUALITY, IT IS  
IMPORTANT TO KNOW THE PROBABILITY THAT MAXIMUM  
POLLUTANT CONCENTRATIONS WILL EXCEED STATE STANDARDS  
STATED FOR VARIOUS AVERAGING TIMES. EXTREME VALUE  
THEORY TO DETERMINE THE LIMITING DISTRIBUTION OF  
MAXIMUM AIR POLLUTANT CONCENTRATIONS AS A FUNCTION OF  
AVERAGING TIME. BOUNDS ON THE LOCATION PARAMETER OF  
THE CORRESPONDING EXTREME VALUE DISTRIBUTION ARE USED  
TO EVALUATE AIR QUALITY. IN PARTICULAR, THESE  
BOUNDS ARE USED TO EVALUATE SUSPENDED PARTICULATE  
DATA. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 730 027 13/7 1/3  
NAVAL AIR SYSTEMS COMMAND WASHINGTON D C PROFESSIONAL  
DEVELOPMENT CENTER

THE PREPARATION OF A SPECIFICATION FOR  
HYDRAULIC FLUID FILTERS FOR AIRCRAFT GROUND  
SUPPORT EQUIPMENT. (U)

DESCRIPTIVE NOTE: SPECIAL PROJECT,  
JUL 71 39P BOSWELL, W. C. , JR;  
REPT. NO. SP-71-01

UNCLASSIFIED REPORT

DESCRIPTORS: (\*HYDRAULIC FLUID FILTERS, SPECIFICATIONS),  
(\*NAVAL AIRCRAFT, GROUND SUPPORT EQUIPMENT), FLUID  
AMPLIFIERS, POROUS MATERIALS, HYDRAULIC FLUIDS,  
CONTAMINATION, PARTICLE SIZE, QUALITY CONTROL, TEST  
METHODS (U)

THE USE OF A HYDRAULIC FLUID TO TRANSMIT POWER IN  
AIRCRAFT PRESENTS MANY PROBLEMS. ONE OF THE MAJOR  
AREAS OF CONCERN IS FLUID CONTAMINATION. THE  
CONTAMINATION MAY TAKE THE FORM OF INORGANIC  
MATERIAL, METAL PARTICLES, OTHER MINUTE PARTICLES,  
AND WATER. THIS CONTAMINATION REQUIRES THAT  
AVIATION GROUND SUPPORT EQUIPMENT BE DESIGNED TO  
ELIMINATE AS MUCH AS POSSIBLE. THE REPORT DEALS  
WITH THE PREPARATION OF A SPECIFICATION FOR GROUND  
SUPPORT EQUIPMENT HYDRAULIC FILTERS. MUCH OF THE  
THEORY CONCERNING FILTRATION IS EMPIRICAL IN NATURE.  
THIS PAPER ATTEMPTS TO JUSTIFY SOME OF THE  
EMPIRICAL TESTS WITH THEORETICAL WORK PRESENTED IN  
THE LITERATURE. FURTHER, SOME OF THE REQUIREMENTS  
OF THE SPECIFICATION ARE INCLUDED WHERE APPROPRIATE.  
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 731 261 13/2 5/1  
RAND CORP SANTA MONICA CALIF

COORDINATION OF INDUSTRIAL AIR AND WATER  
QUALITY PROGRAMS AS AN EFFECTIVE MANAGEMENT  
POLICY,

(U)

JAN 71 6P TIHANSKY, DENNIS P. I  
REPT. NO. P-4551

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AIR POLLUTION, MANAGEMENT PLANNING),  
(\*WATER POLLUTION, MANAGEMENT PLANNING), (\*ENVIRONMENT,  
\*MANAGEMENT PLANNING), WASTES(INDUSTRIAL), INDUSTRIAL  
PLANTS, CONTROL (U)  
IDENTIFIERS: ABATEMENT, COORDINATION (U)

THE PAPER RECOMMENDS THE COORDINATION OF AIR AND  
WATER QUALITY MANAGEMENT PROGRAMS IN INDUSTRY AS AN  
EFFECTIVE APPROACH FOR THE MINIMIZATION OF ABATEMENT  
EXPENDITURES AS WELL AS SCHEDULE DELAYS IN MEETING  
POLLUTION CONTROL REGULATIONS. COMPLEMENTARITY OF  
WASTE TREATMENT PROJECTS IS EVALUATED IN TERMS OF  
BOTH REGIONAL (OUT-OF-PLANT) AND INTRA-FIRM  
ADVANTAGES. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 731 569 13/2  
AIR WAR COLL MAXWELL AFB ALA

ENVIRONMENTAL POLLUTION. (U)

DESCRIPTIVE NOTE: MILITARY ESSAY,  
71 38P KOON, C. DOYLE ;  
REPT. NO. 3856

UNCLASSIFIED REPORT

DESCRIPTORS: (\*WATER POLLUTION, ENVIRONMENT), (\*AIR  
POLLUTION, ENVIRONMENT), (\*WASTES(SANITARY ENGINEERING),  
ENVIRONMENT), WASTES(INDUSTRIAL), CONTROL, ECOLOGY,  
UNITED STATES GOVERNMENT, ECONOMICS (U)  
IDENTIFIERS: ABATEMENT, \*POLLUTION, SOLID WASTE  
DISPOSAL, ENVIRONMENTAL SURVEYS (U)

THE ADEQUATE DISPOSAL OF WASTE AND THE PURIFICATION  
OF AIR AND WATER HAS BECOME A MAJOR ENVIRONMENTAL  
CHALLENGE. A MEAGER AMOUNT OF PROGRESS HAS BEEN  
MADE IN THE PAST, BUT MUCH LACKS TO BE DONE BY THE  
NATION AS A WHOLE. IT IS NOT THE PURPOSE OF THE  
PAPER TO OFFER AN ABSOLUTE SOLUTION TO ALL PROBLEMS  
ENCOUNTERED IN ENVIRONMENTAL POLLUTION. RATHER, IT  
IS AN ATTEMPT TO BRING OUT SOME OF THE POSSIBLE  
SOLUTIONS THAT MAY BE ADOPTED BY GOVERNMENT. THE  
PROBLEMS NOW EXISTING AND SOME OF THE SOLUTIONS IN  
ERADICATING THEM ARE OUTLINED HEREIN AND DISCUSSED.  
(AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 732 679 13/2 6/6  
RAND CORP SANTA MONICA CALIF

FIFTY MORE TIMELY PROBLEMS OF THE  
ENVIRONMENT,

(U)

MAR 71 65P LIRBY, L. M. ;  
REPT. NO. P-4589

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO REPT. NO. P-4415 DATED  
SEP 70.

DESCRIPTORS: (\*ENVIRONMENT, PROBLEM SOLVING), (\*AIR  
POLLUTION, REVIEWS), (\*WATER POLLUTION, REVIEWS),  
CORRECTIONS, ECOLOGY, MINING ENGINEERING, ARSENIC,  
ANTARCTIC REGIONS, SONIC BOOM, AIRPORTS, FOG, ENZYMES,  
SEA ICE, MERCURY, FOOD, USSR, PUBLIC HEALTH, PETROLEUM  
INDUSTRY, VERMONT, ARCTIC REGIONS, INDIANA, HARBORS, NEW  
YORK, SANITARY ENGINEERING, REFINERIES, GEORGIA (U)  
IDENTIFIERS: WATER RECLAMATION, WEATHER MODIFICATION,  
NOISE POLLUTION, HOUSTON SHIP CHANNEL, SURFACE WATER  
RUNOFF, DETERGENTS (U)

THE ARTICLE INCLUDES VERY BRIEF REPORTS ON VARIOUS  
ENVIRONMENTAL TOPICS SOME OF THE TOPICS INCLUDE:  
EARTHQUAKE-RESISTANT BUILDING CONSTRUCTION, NOISE  
POLLUTION; ECOLOGICAL CHANGES CAUSED BY THE ASWAN  
DAM; MONITORING STARTUP OF NEW MINES AND  
SHUTDOWN OF OLD FURNACES; ARSENIC IN DETERGENTS AND  
IN RUN-OFF WATERS; DAMAGED FOOD VALUE OF VEGETABLE  
CROPS; ENZYMES IN DETERGENTS; ENVIRONMENTAL  
SAFETY IN HOUSTON SHIP CHANNEL; LIMITS OF  
HUMAN TOLERANCE FOR MERCURY CONTENT OF FOODS;  
SCALED COSTING OF WATER AS INCENTIVE FOR INDUSTRIAL  
REUSE; THERMAL POLLUTION OF LAKES AND RIVERS;  
SURVEY OF POLLUTION CONTROL BY INDUSTRY; OIL  
DISCOVERIES IN THE ARCTIC--OWNERSHIP; NEW CITY  
ON STATEN ISLAND; PNEUMATIC COLLECTION OF TRASH  
CITYWIDE; DEEP WELL WASTE DISPOSAL FOR WATER;  
STOL AIRPORTS FOR LARGE CITIES; SINKING LAND  
COMBATTED BY SOLID WASTE DISPOSAL; WATER POLLUTION  
BY FEED LOTS; RADIATION TREATMENT FOR SEWAGE; TAX  
INCENTIVES FOR COAL BURNERS. (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 732 690 13/2  
RAND CORP SANTA MONICA CALIF

AIR POLLUTION,

(U)

FEB 71 34P PAPETTI, R. A. GILMORE, F.  
R. J  
REPT. NO. P-4571

UNCLASSIFIED REPORT

AVAILABILITY: PAPER COPY AVAILABLE FROM RAND  
CORPORATION, 1700 MAIN ST., SANTA MONICA, CALIF.  
90406. NO COPIES FURNISHED BY DDC OR NTIS.

DESCRIPTORS: (\*AIR POLLUTION, \*REVIEWS), MATHEMATICAL  
MODELS, URBAN AREAS, ATMOSPHERIC MOTION,  
WASTES(INDUSTRIAL), PHOTOCHEMISTRY, PUBLIC HEALTH,  
CORROSION, METALS, SULFUR COMPOUNDS, PARTICLES, NITROGEN  
OXIDES (U)  
IDENTIFIERS: SMOG, SULFUR DIOXIDE (U)

THE ARTICLE DISCUSSES AIR POLLUTION'S SOURCES,  
DISTRIBUTION, HARMFUL EFFECTS, AND MATHEMATICAL  
MODELLING. AS THE PACE OF INDUSTRIALIZATION,  
URBANIZATION AND MECHANIZATION INCREASES, THE  
RELATIVELY SIMPLE AND INEXPENSIVE MEASURES THAT  
REDUCE ONLY PART OF THE POLLUTANT EMISSIONS BECOME  
INADEQUATE, AND MUCH MORE COSTLY CHANGES MUST BE  
MADE. IN SUCH CIRCUMSTANCES, MUCH EXPENSE AND  
INCONVENIENCE CAN PROBABLY BE SAVED BY USING  
MATHEMATICAL MODELS OF POLLUTANT TRANSPORT,  
PHOTOCHEMICAL REACTION, AND DISPERSION TO DETERMINE  
THE BEST WAY TO MAINTAIN THE DESIRED AIR QUALITY  
THROUGHOUT A POPULATED REGION. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 733 061 18/3 4/2  
APPLIED THEORY INC LOS ANGELES CALIF

LOFTING OF PARTICULATES BY A HIGH SPEED  
WIND.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
SEP 71 66P HARTENBAUM, BRUCE ;  
REPT. NO. ATR-71-25  
CONTRACT: DASA01-70-C-0041  
PROJ: DNA-NWER-XAXS  
TASK: A001  
MONITOR: DNA 2737

UNCLASSIFIED REPORT

DESCRIPTORS: (\*NUCLEAR EXPLOSIONS, AIR POLLUTION),  
(\*CRATERING, DUST), ATMOSPHERIC MOTION, DIFFUSION,  
EXPERIMENTAL DESIGN, WIND TUNNELS, FLUID FLOW  
IDENTIFIERS: \*ATMOSPHERIC DIFFUSION

(U)

(U)

WIND TUNNEL STUDIES OF PARTICULATE LOFTING WERE  
CONDUCTED AT FREE STREAM SPEEDS OF BETWEEN 112 AND  
376 FPS. MEASUREMENTS WERE MADE OF THE RATE AT  
WHICH PARTICULATES WERE LOFTED, OF THE WIND VELOCITY  
PROFILE AND OF THE NUMBER DEBSITY OF AIRBORNE  
PARTICULATES. THE MEASUREMENT BEARING THE MOST  
PRACTICAL SIGNIFICANCE WAS THAT OF THE LOFTING RATE;  
THE MEASURED LOFTING RATE WAS ONLY 1/10 THAT OF THE  
MAXIMUM RATE PREDICTED BY CURRENT THEORY, ALTHOUGH  
THE LOFTING RATE WAS FOUND TO BE DIRECTLY  
PROPORTIONAL TO THE SHEAR STRESS VELOCITY IN ACCORD  
WITH THE THEORY. THE VELOCITY PROFILE WITHIN THE  
BOUNDARY LAYER BUT AT HEIGHTS GREATER THAN THE  
EFFECTIVE ROUGHNESS CREATED BY THE PARTICULATE FLOW  
IS OF THE FORM GIVEN BY PRANDTL'S LAW FOR FLOW PAST  
A WALL. BOUNDARY LAYER CALCULATIONS IN CONJUNCTION  
WITH THE MEASUREMENTS SHOW THAT OWEN'S FORM FOR THE  
FLOW LAW CANNOT HOLD NEAR THE HEAD OF THE BOUNDARY  
LAYER. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 733 227 4/2

NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

AN INVESTIGATION INTO THE EFFECT OF AN  
INDUSTRIAL HEAT AND MOISTURE SOURCE ON  
LOCAL ATMOSPHERIC CONDITIONS.

(U)

DESCRIPTIVE NOTE: MASTER'S THESIS,  
SEP 71 81P KRAFT, JAMES CLINTON ;

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AIR POLLUTION, HEAT), (\*ATMOSPHERIC  
MOTION, HEAT), (\*ELECTRIC POWER PRODUCTION, AIR  
POLLUTION), POWER PLANTS(ESTABLISHMENTS), MOISTURE,  
TEMPERATURE, COMPUTER PROGRAMS, CALIFORNIA, WATER VAPOR,  
THESES (U)

IDENTIFIERS: \*TEMPERATURE INVERSIONS, \*THERMAL  
POLLUTION (U)

USING A STEAM ELECTRIC GENERATING PLANT AS THE  
SOURCE, AN INVESTIGATION WAS MADE INTO THE LOCAL  
ATMOSPHERIC EFFECT OF A LARGE INDUSTRIAL HEAT AND  
MOISTURE SOURCE. DATA COLLECTION WAS ATTEMPTED  
WITH GROUND- AND HELICOPTER-BORNE EQUIPMENT WITH A  
FINAL RESORT TO THE HELICOPTER WHEN THE GROUND  
EQUIPMENT COLLECTION TECHNIQUES PROVED  
UNSATISFACTORY. CROSS SECTIONS OF TEMPERATURE AND  
MOISTURE WERE DRAWN FROM THIS DATA AND YIELDED SOME  
VERY INTERESTING PROFILES. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 733 505 13/2 15/5  
ENVIRONMENTAL TECHNICAL APPLICATIONS CENTER (AIR FORCE)  
WASHINGTON D C

DETERMINATION OF MAXIMUM EMISSION RATES TO  
MEET AIR QUALITY STANDARDS. (U)

DESCRIPTIVE NOTE: TECHNICAL NOTE,  
AUG 71 22P GREENWAY, A. ROGER ; LYDON,  
DAVID S. ;  
REPT. NO. USAFETAC-TN-71-9

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AIR POLLUTION, \*MILITARY FACILITIES),  
(\*ATMOSPHERIC MOTION, AIR POLLUTION), COMBUSTION  
PRODUCTS, DIFFUSION, AIR FORCE OPERATIONS, WIND,  
STANDARDS (U)  
IDENTIFIERS: MILITARY AIR FACILITIES, AIR POLLUTION  
STANDARDS, ATMOSPHERIC DIFFUSION, \*FLUE GASES, TINKER  
AIR FORCE BASE (U)

THE REPORT EXPLAINS BRIEFLY THE TECHNIQUE USED TO  
CALCULATE FOR CERTAIN AIR FORCE BASES ALLOWABLE  
STACK EMISSIONS WITHIN THE LIMITS OF THE  
ENVIRONMENTAL PROTECTION AGENCY'S AIR  
QUALITY STANDARDS. EXAMPLES OF SUCH  
CALCULATIONS FOR CAPE KENNEDY AFS, KELLY  
AFB, AND TINKER AFB ARE GIVEN. GRAPHS OF  
'EMISSION RATE VS DOWNWIND DISTANCES' ARE  
FURNISHED WHICH ALLOW DOWNWIND GROUND-CONCENTRATIONS  
OF SPECIFIC POLLUTANTS TO BE READILY ESTIMATED FOR  
EFFECTIVE STACK HEIGHTS OF 30, 50, AND 70 FEET.  
(AUTHOR) (U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 735 943 13/2

DEPARTMENT OF TRANSPORTATION WASHINGTON D C LIBRARY  
SERVICES DIV

AIRCRAFT AND AIR POLLUTION. SELECTED  
READINGS.

(U)

DESCRIPTIVE NOTE: REPT. FOR 1960-1971,

DEC 71 66P POEHLMAN, DOROTHY J. ;  
REPT. NO. BIBLIOGRAPHIC LIST-7

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AIR POLLUTION, AIRCRAFT ENGINES),  
(\*AIRCRAFT ENGINES, \*EXHAUST GASES), BIBLIOGRAPHIES,  
AVIATION FUELS, DISPOSAL, SUPERSONIC AIRCRAFT, CLIMATE,  
PARTICLES, AIRPORTS, ECOLOGY, GAS TURBINES, FUEL  
ADDITIVES, MONITORS (U)

IDENTIFIERS: AIR POLLUTION DETECTION, AIR POLLUTION,  
CONTROL, AIR POLLUTION CONTROL EQUIPMENT, \*AIRCRAFT  
EXHAUST, GOVERNMENT POLICIES (U)

PRESENTED IS A SELECTED, PARTIALLY ANNOTATED  
LISTING OF PAPERS, REPORTS, AND PERIODICAL ARTICLES,  
ON THE SUBJECT OF ENVIRONMENTAL POLLUTION CAUSED BY  
AIRCRAFT EMISSIONS. NOISE POLLUTION IS NOT  
INCLUDED. THE PERIOD COVERED IS FROM APPROXIMATELY  
1960 - SPRING 1971. THE ARRANGEMENT IS BY  
SUBJECT CATEGORIES WITH AUTHOR, CORPORATE SOURCE AND  
GEOGRAPHIC INDEXES. (AUTHOR) (U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 736 097 6/5

NATIONAL INST FOR OCCUPATIONAL SAFETY AND HEALTH ROCKVILLE  
MD

HEALTH ASPECTS OF SMOKING IN TRANSPORT  
AIRCRAFT.

(U)

DFC 71 92P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH FEDERAL  
AVIATION ADMINISTRATION, WASHINGTON, D. C. AND  
DEPARTMENT OF TRANSPORTATION, WASHINGTON, D. C.

DESCRIPTORS: (\*TOBACCO, AIR POLLUTION), (\*AIR POLLUTION,  
COMMERCIAL PLANES), (\*PUBLIC HEALTH, CIVIL AVIATION),  
SMOKE, PERFORMANCE(HUMAN), FLIGHT CREWS, CARBON  
MONOXIDE, PARTICLES, HYDROCARBONS, AMMONIA, OZONE,  
THRESHOLDS(PHYSIOLOGY), CONFINED ENVIRONMENTS (U)

IDENTIFIERS: \*SMOKING, \*INDOOR AIR POLLUTION (U)

THE PURPOSE OF THE STUDY WAS TO DEFINE THE LEVELS  
OF CERTAIN COMBUSTION BY-PRODUCTS OF TOBACCO PRODUCED  
BY PASSENGERS' SMOKING; TO DETERMINE PASSENGERS'  
SUBJECTIVE REACTION TO TOBACCO SMOKE; AND TO OBTAIN  
PASSENGER OPINION ON THE NEED FOR REGULATORY CHANGE  
REGARDING THE CONTROL OF SMOKING IN COMMERCIAL  
PASSENGER AIRPLANES. THE STUDY INVOLVED (1) THE  
COLLECTION OF SAMPLES TO DETERMINE THE ENVIRONMENTAL  
EXPOSURE LEVELS TO CARBON MONOXIDE, PARTICULATE  
MATTER, POLYNUCLEAR HYDROCARBONS, AMMONIA, AND OZONE,  
AND (2) THE USE OF A QUESTIONNAIRE DURING TWENTY  
MILITARY AIRLIFT COMMAND (MAC) INTERNATIONAL  
FLIGHTS AND EIGHT DOMESTIC FLIGHTS. THE RESULTS OF  
ENVIRONMENTAL SAMPLING REVEALED VERY LOW LEVELS OF  
EACH CONTAMINANT MEASURED, MUCH LOWER THAN THOSE  
RECOMMENDED IN OCCUPATIONAL AND ENVIRONMENTAL AIR  
QUALITY STANDARDS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 736 763 6/6  
ROSENSTIEL SCHOOL OF MARINE AND ATMOSPHERIC SCIENCE MIAMI  
FLA

PESTICIDES IN THE LOWER ATMOSPHERE OF THE  
NORTHERN EQUATORIAL ATLANTIC OCEAN, (U)

APR 71 9P SERA, D. B. ; PROSPERO, J.

M. ;

REPT. NO. CONTRIB-1381  
CONTRACT: NONR-4008(02), NSF-GA-25916

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN ATMOSPHERIC ENVIRONMENT,  
VS P1043-1050 1971.

SUPPLEMENTARY NOTE: REVISION OF REPORT DATED 2 NOV  
70.

DESCRIPTORS: (\*PESTICIDES, TROPOSPHERE), MEASUREMENT,  
ATMOSPHERES, WIND, TRANSPORT PROPERTIES, CONTAMINATION,  
MARINE METEOROLOGY, AEROSOLS, WEST INDIES (U)

TRADE WIND AEROSOLS IN THE GIANT PARTICLE SIZE  
RANGE WERE COLLECTED CONTINUOUSLY AT BARBADOS,  
WEST INDIES, FROM 22 NOVEMBER TO 4 DECEMBER,  
1968. THERE IS NO CORRELATION BETWEEN THE AIR  
CONCENTRATION OF THESE PESTICIDES AND THAT OF  
AIRBORNE DUST WHICH IS BELIEVED TO BE DERIVED FROM  
ARID REGIONS OF WEST AFRICA; EVIDENCE SUGGESTS  
THAT THE PESTICIDES ORIGINATED FROM THE HIGHER  
LATITUDES, EITHER EUROPE OR NORTH AMERICA.  
THE POSSIBLE IMPORTANCE OF THE WIND-TRANSPORT OF  
PESTICIDES TO REMOTE MARINE ENVIRONMENTS IS  
DISCUSSED. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 737 853 18/8 4/1  
STANFORD RESEARCH INST MENLO PARK CALIF

RADIOACTIVE FALLOUT AND SECULAR EFFECTS IN  
ATMOSPHERIC ELECTRICITY.

(U)

DESCRIPTIVE NOTE: SCIENTIFIC NOTE NO. 16,  
AUG 71 9P PIERCE, E. T. ;  
CONTRACT: N00014-71-C-0106  
PROJ: SRI-4454

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN JNL. OF GEOPHYSICAL  
RESEARCH, V77 N3 P482-487, 20 JAN 72.

DESCRIPTORS: (\*FALLOUT, ATMOSPHERIC ELECTRICITY),  
(\*ATMOSPHERIC ELECTRICITY, CORRELATION TECHNIQUES), AIR  
POLLUTION, IONIZATION, GREAT BRITAIN, JAPAN,  
PORTUGAL

(U)

CHANGES IN THE POTENTIAL GRADIENT AT SIX  
OBSERVATORIES IN BRITAIN, JAPAN, AND PORTUGAL,  
ARE EXAMINED OVER THE PERIOD 1950 TO 1964. THE  
CHANGES FOLLOW THE SAME PATTERN AT ALL SIX STATIONS.  
THE ACCUMULATION OF SURFACE RADIOACTIVE FALLOUT,  
FOLLOWING NUCLEAR EXPLOSIONS, OFFERS A PLAUSIBLE  
CAUSATIVE EXPLANATION FOR THE POTENTIAL GRADIENT  
VARIATIONS. THIS EXPLANATION IS SUPPORTED BY  
SIMILARITIES IN THE VARIATIONS AND IN NUCLEAR  
TESTING. FURTHER CONFIRMATORY EVIDENCE IS  
FURNISHED BY COMPARING BRITISH DATA ON THE  
POTENTIAL GRADIENT CHANGES AND ON ALTERATIONS IN THE  
NEAR-SURFACE IONIZATION RATE. ANALYTIC DEVELOPMENT  
OF THIS COMPARISON ENABLES THE ATMOSPHERIC  
ENVIRONMENT AT THE TWO BRITISH OBSERVATORIES TO BE  
IDENTIFIED, RESPECTIVELY, AS NUCLEUS (POLLUTION)  
DOMINATED AND RELATIVELY CLEAN; THIS DIFFERENTIATION  
IS CONFIRMED BY INDEPENDENT EVIDENCE AND EXTENDED TO  
THE JAPANESE AND PORTUGUESE LOCATIONS. THE  
FALLOUT ACCUMULATION CONSIDERABLY COMPLICATES STUDIES  
OF THE ELECTRODE EFFECT AND OF RELATIONSHIPS BETWEEN  
POLLUTION AND ATMOSPHERIC ELECTRICITY. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 738 544 13/2  
EDGEWOOD ARSENAL MD

PROCEEDINGS OF MEETING ON ENVIRONMENTAL  
POLLUTION (1ST), HELD ON 15-16 APRIL 1970,  
SPONSORED BY AMERICAN ORDNANCE ASSOCIATION. (U)

DESCRIPTIVE NOTE: SPECIAL PUBLICATION,  
FEB 72 229P ENGQUIST, ELMER ;  
REPT. NO. EA-SP-100-78

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AIR POLLUTION, SYMPOSIA), (\*WATER  
POLLUTION, SYMPOSIA), CHEMICAL WARFARE AGENTS, DISPOSAL,  
WASTES (INDUSTRIAL), CARBON, MUNITIONS INDUSTRY, NERVE  
AGENTS, CHEMICAL INDUSTRY, ATMOSPHERIC MOTION,  
AEROSOLS (U)

IDENTIFIERS: VOLUNTEER ARMY AMMUNITION PLANT, CONTROL,  
WATER POLLUTION, ACTIVATED CARBON, AIR POLLUTION  
DETECTION, REMOTE SENSING, \*SOLID WASTE DISPOSAL,  
INDUSTRIAL WASTE TREATMENT (U)

THE REPORT CONTAINS THE PAPERS PRESENTED AT  
EDGEWOOD ARSENAL ON 15 AND 16 APRIL 1970 AT THE  
FIRST MEETING ON ENVIRONMENTAL POLLUTION  
SPONSORED BY THE AMERICAN ORDNANCE ASSOCIATION.  
THE PAPERS WERE PRESENTED BY REPRESENTATIVES OF  
DEPARTMENT OF DEFENSE, INDUSTRY, AND PREDECESSOR  
ORGANIZATIONS OF THE ENVIRONMENTAL PROTECTION  
AGENCY (NATIONAL AIR POLLUTION CONTROL  
ADMINISTRATION, BUREAU OF SOLID WASTE  
MANAGEMENT, AND FEDERAL WATER POLLUTION  
CONTROL ADMINISTRATION). TOPICS INCLUDE  
SOLID AND LIQUID WASTE DISPOSAL, WATER AND AIR  
POLLUTION CONTROL, AND AIR MONITORING TECHNIQUES.  
(AUTHOR) (U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-738 799 13/2  
NAVAL RESEARCH LAB WASHINGTON D C

A SURVEY OF AUTOMOTIVE EMISSIONS. (U)

DESCRIPTIVE NOTE: INTERIM REPT.,  
OCT 71 42P LOCKHART, LUTHER B. ;ALI,  
ABDUL W. ;MANGE, PHILLIP W. ;  
REPT. NO. NRL-MR-2346  
PROJ: NRL-K03-50

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AIR POLLUTION, EXHAUST GASES), (\*EXHAUST  
GASES, \*PASSENGER VEHICLES), CARBON MONOXIDE,  
LEAD(METAL), REVIEWS, ATMOSPHERIC MOTION, PUBLIC HEALTH,  
PLANTS(BOTANY), HYDROCARBONS, NITROGEN OXIDES,  
PHOTOCHEMICAL REACTIONS, PARTICLES, ASBESTOS, TIRES (U)  
IDENTIFIERS: AIR POLLUTION EFFECTS(PLANTS), AIR  
POLLUTION EFFECTS(ANIMALS), \*AUTOMOBILE EXHAUST,  
AUTOMOBILE ENGINES, SMOG (U)

A SURVEY HAS BEEN MADE OF THE GENERATION, DISPERSAL  
AND REMOVAL PROCESSES FOR THE VARIOUS AUTOMOTIVE  
EMISSIONS AND THEIR NATURAL COUNTERPARTS IN THE  
ATMOSPHERE, AND OF THEIR EFFECTS ON MAN AND HIS  
ENVIRONMENT. IN ONLY A FEW CATEGORIES (I.E.,  
CO, PB) ARE AUTOMOTIVE EMISSIONS OF  
SIGNIFICANCE RELATIVE TO OTHER ANTHROPOGENIC OR  
NATURAL SOURCES OF POLLUTANTS IN THE ATMOSPHERE AS A  
WHOLE; HOWEVER, LOCALIZED EFFECTS CAN BE OVERRIDING  
AS A RESULT OF PECULIAR GEOGRAPHICAL OR  
METEOROLOGICAL FACTORS. UNDER CERTAIN CONDITIONS  
OF POPULATION DENSITY, AUTOMOBILE USAGE AND WEATHER,  
PHOTOCHEMICALLY MODIFIED AUTOMOTIVE EFFLUENTS HAVE  
APPROACHED THE THRESHOLD TOXICITY LIMITS FOR  
SUSCEPTIBLE INDIVIDUALS AND PLANTS. THERE ARE  
APPARENTLY NO SIGNIFICANT LONG-TERM ATMOSPHERIC  
CHANGES THAT MAN MIGHT PRODUCE WHICH CANNOT BE  
RAPIDLY REVERSED AT ANY TIME BY MAN'S CURTAILMENT OF  
HIS OWN ACTIVITIES. (AUTHOR) (U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 738 801 13/2 14/2 13/6  
NAVAL RESEARCH LAB WASHINGTON D C

LARGE-SCALE MONITORING OF AUTOMOBILE  
EXHAUST PARTICULATES; METHODS AND COSTS. (U)

DESCRIPTIVE NOTE: FINAL REPT. JUN-AUG 71,  
OCT 71 26P BIRKS, L. S. GILFRICH, J.  
V. INAGEL, D. J. I  
REPT. NO. NRL-MP-2350  
PROJ: NRL-K03-50

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AIR POLLUTION, EXHAUST GASES), (\*EXHAUST  
GASES, \*PASSENGER VEHICLES), MEASUREMENT, PARTICLE SIZE,  
CHEMICAL ANALYSIS, MONITORS, COSTS, ATOMIC SPECTROSCOPY,  
X RAY SPECTROSCOPY, SAMPLING, PARTICLES (U)  
IDENTIFIERS: FLUORESCENCE, X RAYS, \*MOTOR VEHICLE  
INSPECTION, \*AIR POLLUTION DETECTION, \*AUTOMOBILE  
EXHAUST, IMPACTORS (U)

THE HYPOTHETICAL PROBLEM ADDRESSED IS ANNUAL  
MONITORING OF 150 MILLION CARS FOR EXHAUST  
PARTICULATES. FOUR TOPICS ARE REVIEWED CONCERNING  
THE PARTICULATES: TOTAL MASS EXPRESSED IN GRAMS  
PER MILE; PARTICLE SIZE DISTRIBUTION; ELEMENTAL  
ANALYSIS; STATE OF CHEMICAL COMBINATION. AT  
PRESENT THE ONLY SPECIFICATION IS IN GRAMS PER MILE  
BUT CONSIDERATION IS BEING GIVEN TO PARTICLE SIZE AND  
TO ELEMENTAL ANALYSIS OF KNOWN HARMFUL CONSTITUENTS.  
SINCE MANUFACTURERS WILL NOT BE TOLD HOW TO MEET  
THE SPECIFICATIONS, A WIDE VARIETY OF EMISSION  
CONTROL SYSTEMS MAY BE EXPECTED AND ALONG WITH THEM A  
WIDE VARIETY OF PARTICULATE COMPOSITIONS.  
(AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 739 197 7/4 4/1  
IIT RESEARCH INST CHICAGO ILL

SUBMICRON SEPARATION AND DATA.

(U)

DESCRIPTIVE NOTE: LITERATURE SURVEY, 16 APR-31 OCT 71  
ON TASK 1.

OCT 71 363P DAVIES, REG ; WERLE, DON K. ;

WNEK, WALTER J. ;

REPT. NO. IITRI-C6239-A005-1

CONTRACT: F33657-71-C-0859, ARPA ORDER-1702

PROJ: VT/1414/RDE/ASD, ARPA-1F10

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AEROSOLS, \*ADHESION), (\*AIR POLLUTION,  
PARTICLES), REVIEWS, SOURCES, PARTICLE SIZE, UPPER  
ATMOSPHERE, SAMPLING, MEASUREMENT, MATHEMATICAL MODELS,  
SURFACE PROPERTIES, ADSORPTION, MOLECULAR ASSOCIATION,  
SEPARATION (U)

IDENTIFIERS: ZETA POTENTIAL, SEPARATORS, GAS SAMPLING,  
DISPERSIONS (U)

THE OBJECTIVE OF THE PROJECT IS TO DEVELOP THE  
METHODS, PROCEDURES, AND EQUIPMENT REQUIRED TO  
ISOLATE INDIVIDUAL SUBMICRON PARTICLES FROM AN  
AGGLOMERATED MATRIX FOR ANALYSIS BY VARIOUS  
TECHNIQUES. THE PARTICLES OF PRIME INTEREST ARE  
THOSE SUBMICRON PARTICLES FOUND IN THE ATMOSPHERE AS  
A RESULT OF INDUSTRIAL AIR POLLUTION. THE REPORT  
PRESENTS A REVIEW OF THIS AREA AND CONTAINS OVER 1100  
REFERENCES. THE TOPICS REVIEWED INCLUDE:

BASIC CONCEPTS OF SUBMICRON SEPARATION;  
ATMOSPHERIC AEROSOLS (PROPERTIES, SOURCES, NATURE  
OF, SIZE AND SHAPE); ADHESION OF ATMOSPHERIC  
PARTICLES (FORCES, MECHANISM AND METHODS OF  
MEASURING ADHESION AND SEPARATION FORCES, INDEXES OF  
DISPERSION); MATHEMATICAL MODELS OF ADHESION AND  
AGGLOMERATION; METHODS OF SAMPLING, COLLECTING AND  
ANALYZING SUBMICRON PARTICLES (IN AIR, IN  
LIQUID). (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 740 871 4/1 20/6  
MAINZ UNIV (WEST GERMANY) METEOROLOGISCH-GEOPHYSIKALISCHES  
INSTITUT

RESEARCH ON ATMOSPHERIC OPTICAL RADIATION  
TRANSMISSION.

(U)

DESCRIPTIVE NOTE: FINAL SCIENTIFIC REPT. 1 JAN-31 DEC  
71,

FEB 72 78P BARY, ELISABETH DE BULLRICH,  
KURT EIDEN, REINER ESCHELBACH, GUENTER HAENEL,  
GOTTFRIED

CONTRACT: F61052-69-C-0016

PROJ: AF-7621

TASK: 762103

MONITOR: AFCL 72-0180

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO REPORT DATED JAN 71, AD-  
722 538.

DESCRIPTORS: (\*ATMOSPHERES, \*LIGHT TRANSMISSION),  
(\*AEROSOLS, ATMOSPHERES), (\*AIR POLLUTION, PARTICLES),  
THERMAL RADIATION, PARTICLE SIZE, ABSORPTION,  
POLARIZATION, SCATTERING, REFRACTIVE INDEX, SKY  
BRIGHTNESS, HUMIDITY, TURBULENCE, REFLECTION, WATER  
VAPOR, HEAT TRANSFER, WEST GERMANY (U)  
IDENTIFIERS: LIGHT SCATTERING, OPTICS, RADIATION,  
ATMOSPHERES, ATTENUATION, STOKES PARAMETERS (U)

TO ASSESS THE CONTRIBUTION OF PARTICULATE  
POLLUTANTS TO RADIATIVE PROCESSES AND RADIATIVE  
TRANSFER, IT IS NECESSARY TO KNOW THE RADIATION  
CHARACTERISTICS OF NATURAL AND ANTHROPOGENIOUS  
PARTICLES. THE REPORT DESCRIBES THE NUMBER AND THE  
SIZE OF THE ATMOSPHERIC AEROSOL PARTICLES AND THE  
POSSIBILITIES TO EVALUATE THEM BY OPTICAL METHODS.  
THEORETICAL RESULTS OF THE INFLUENCE OF ABSORBENT  
AEROSOL PARTICLES ON THE ENERGY BALANCE OF THE  
ATMOSPHERE IN THE VISIBLE WAVELENGTH RANGE ARE ALSO  
DISCUSSED. SOME MEASUREMENT RESULTS ARE GIVEN OF  
SPECTRAL SOLAR EXTINCTION AND SKY RADIANCES.  
FINALLY, A SURVEY IS PRESENTED OF NEW EXPERIMENTAL  
RESULTS OF SOME FUNDAMENTAL PARAMETERS OF ATMOSPHERIC  
AEROSOL PARTICLES SUCH AS DENSITY, REFRACTIVE INDEX,  
EXTINCTION COEFFICIENT, VOLUME - AND MASS CHANGE AS A  
FUNCTION OF THE RELATIVE HUMIDITY OF THE AIR. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 741 605 10/2 13/2  
RAND CORP SANTA MONICA CALIF

SOME ASPECTS OF THE ENVIRONMENT AND ELECTRIC  
POWER GENERATION,

(U)

FEB 72 32P DENIS, SYLVAIN ;  
REPT. NO. P-4777

UNCLASSIFIED REPORT

DESCRIPTORS: (\*ELECTRIC POWER PRODUCTION, \*ENVIRONMENT),  
(\*AIR POLLUTION, ELECTRIC POWER PRODUCTION), (\*WATER  
POLLUTION, ELECTRIC POWER PRODUCTION), COSTS, CONTROL,  
FUEL CONSUMPTION, REVIEWS (U)  
IDENTIFIERS: FOSSIL FUELS (U)

THE PAPER IS A REVIEW OF THE AVAILABLE INFORMATION  
ABOUT THE RELATIONSHIP BETWEEN ELECTRIC POWER  
GENERATION AND THE ENVIRONMENT. THE FOCUS HAS BEEN  
PRIMARILY ON THE COST ESTIMATES FOR DEVICES INTENDED  
TO CONTROL POLLUTION. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 741 996 8/10 18/8 7/5  
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

CYANIDE EXTRACTION AND ELECTRODISPOSITION OF  
TRACE AMOUNTS OF RADIOACTIVE SILVER FROM  
LARGE BIOLOGICAL SAMPLES, (U)

AUG 71 5P HODGE, V. F. FOLSOM, T.  
R. ;  
CONTRACT: N00014-69-A-0200-6011, AT(04-3)-34

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN ANALYTICAL CHEMISTRY, V44  
N2 P381-383 FEB 72.

SUPPLEMENTARY NOTE: REVISION OF REPORT DATED 21 JUN  
71.

DESCRIPTORS: (\*AQUATIC ANIMALS, \*RADIOACTIVE  
CONTAMINATION), (\*SILVER, RADIOACTIVE CONTAMINATION),  
RADIOACTIVE ISOTOPES, LIVER, MICROANALYSIS,  
IDENTIFICATION, RADIATION MEASURING INSTRUMENTS,  
CYANIDES, ELECTRODEPOSITION, FALLOUT, AIR POLLUTION (U)  
IDENTIFIERS: RADIONUCLIDES, TRACE ELEMENTS (U)

THE STUDY OF RADIOACTIVE SILVER IN THE MARINE  
BIOSPHERE WAS RECENTLY GIVEN NEW IMPETUS WHEN THE  
LONG-LIVED NUCLIDE  $108\text{Mg}$  ( $T_{1/2} = 127 \text{ YR}$ ) WAS  
FOUND IN THE LIVERS OF SEVERAL SPECIES OF MARINE  
ANIMALS CAUGHT IN 1964-1965. IT BECAME APPARENT  
THAT IF  $110\text{Mg}$  ( $T_{1/2} = 253 \text{ D}$ ) COULD BE MEASURED  
ALONG WITH  $108\text{Mg}$ , THE RATIO OF THESE TWO NUCLIDES  
MIGHT BE USEFUL IN SOME CASES IN IDENTIFYING THE  
ORIGIN OF THE RADIOSILVER. THESE NUCLIDES MAY  
ENTER THE BIOSPHERE AS FALLOUT FROM NUCLEAR WEAPONS  
OR AS POLLUTION FROM NUCLEAR GENERATING STATIONS OR  
NUCLEAR POWERED VESSELS. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 742 107 13/2

OFFICE OF THE DEPUTY ASSISTANT SECRETARY OF DEFENSE FOR  
ENVIRONMENTAL QUALITY WASHINGTON D C

DEPARTMENT OF DEFENSE ENVIRONMENTAL QUALITY  
PROGRAM.

(U)

DESCRIPTIVE NOTE: STATUS REPT.

JAN 72 120P

UNCLASSIFIED REPORT

DESCRIPTORS: (\*DEPARTMENT OF DEFENSE, \*ENVIRONMENT),  
(\*AIR POLLUTION, DEPARTMENT OF DEFENSE), (\*WATER  
POLLUTION, DEPARTMENT OF DEFENSE), HERBICIDES, OILS,  
NOISE, RADIATION EFFECTS, AIR FORCE, NAVY, ARMY, HEAT,  
PESTICIDES, RADIOACTIVE WASTES, CONTROL (U)  
IDENTIFIERS: NOISE POLLUTION, OCEAN WASTE DISPOSAL,  
\*POLLUTION, SOLID WASTE DISPOSAL, \*GOVERNMENT  
POLICIES, HAZARDOUS MATERIALS, THERMAL POLLUTION,  
ELECTROMAGNETIC RADIATION HAZARDS (U)

THE REPORT PROVIDES THE STATUS OF THE DEPARTMENT  
OF DEFENSE ENVIRONMENTAL QUALITY PROGRAM AS  
OF 1 JANUARY 1972. IT DISCUSSES THE OVERALL  
DEFENSE DEPARTMENT POLICY AND PROGRAMS FOR THE  
PROTECTION AND ENHANCEMENT OF THE NATION'S  
ENVIRONMENT AND INDICATES THE VARIOUS ORGANIZATIONAL  
ELEMENTS INVOLVED AND THEIR RESPECTIVE  
RESPONSIBILITIES. THE SPECIFIC PROGRAMS OF THE  
DEFENSE SUPPLY AGENCY, ARMY (MILITARY  
ACTIVITIES), ARMY (CIVIL WORKS), NAVY  
AND AIR FORCE ARE REVIEWED IN SEPARATE CHAPTERS.  
THESE PROGRAMS INCLUDE THOSE TO ABATE AIR, WATER,  
NOISE, LAND AND RADIATION POLLUTION; SOLID WASTE,  
TOXIC AND HAZARDOUS MATERIALS DISPOSAL; RESEARCH AND  
DEVELOPMENT ACTIVITIES; TRAINING PROGRAMS, AND THE  
ENHANCEMENT OF THE ENVIRONMENT. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 743 263 13/2 20/4 9/3  
TORONTO UNIV (ONTARIO) INST FOR AEROSPACE STUDIES

EXPERIMENTAL INVESTIGATION OF AN AIR CURTAIN  
FOR PROTECTION OF AN OUTDOOR POWER  
INSTALLATIONS FROM SALT SPRAY.

(U)

DESCRIPTIVE NOTE: TECHNICAL NOTE,

AUG 71 41P ALLEN, G. A. S. ;  
REPT. NO. UTIAS-TN-171

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AIR POLLUTION, CONTROL SYSTEMS), (\*POWER  
EQUIPMENT, PROTECTION), JETS, AIR, MASS TRANSFER, SALTS,  
GAS FLOW, CANADA (U)  
IDENTIFIERS: \*AIR CURTAINS (U)

AN EXPERIMENTAL INVESTIGATION WAS CARRIED OUT IN  
THE UTIAS SUBSONIC WIND TUNNEL OF THE APPLICABILITY  
OF AN AIR CURTAIN TO PROTECT OUTDOOR ELECTRIC POWER  
INSTALLATIONS FROM WIND-BORNE SALT SPRAY. THE SALT  
EMANATES FROM AN ELEVATED ROADWAY THAT IS SALTED IN  
THE WINTER, BEING THROWN UP BY PASSING TRAFFIC.  
THE SALT WAS SIMULATED BY A TRACER GAS  
(HELIUM), THE CONCENTRATIONS OF WHICH WERE  
MEASURED IN THE REGION TO BE PROTECTED. THE  
INVESTIGATION, ALTHOUGH NOT DEFINITIVE, INDICATES  
THAT REDUCTIONS OF THE ORDER OF 70% IN  
CONTAMINATION CAN BE ACHIEVED. ADDITIONAL DESIGN  
STUDIES AND EXPERIMENTAL WORK WOULD BE NEEDED TO  
ARRIVE AT FIRM CONCLUSIONS CONCERNING COST AND  
PERFORMANCE. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 743 541 13/2 18/7  
IIT RESEARCH INST CHICAGO ILL

SUBMICRON SEPARATION AND DATA.

(U)

DESCRIPTIVE NOTE: SUPPLEMENTARY REPT., 1 NOV 71-31 MAY  
72 ON TASK 1,

MAY 72 34P WERLE, DON ; DAVIES, REG ;

REPT. NO. IITRI-C6239-A005-2

CONTRACT: F33657-71-C-0859, ARPA ORDER-1702

PROJ: VT/1414/RDE/ASD, ARPA 1F10

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-739 197. REPORT ON  
ENVIRONMENTAL CONTAMINATION BY THE NUCLEAR  
INDUSTRY.

DESCRIPTORS: (\*AIR POLLUTION, \*RADIOACTIVE WASTES),  
(\*NUCLEAR POWER PLANTS, AIR POLLUTION), REVIEWS,  
PARTICLES, FALLOUT, NATURAL RADIOACTIVITY, URANIUM,  
PLUTONIUM, RADIOACTIVE ISOTOPES, NUCLEAR EXPLOSIONS (U)

A BRIEF SUMMARY OF RECENT LITERATURE ON THE NATURE  
OF ATMOSPHERIC RELEASES OF RADIOACTIVE PARTICULATES  
BY THE NUCLEAR INDUSTRY IS PRESENTED. THE REPORT  
FIRST REVIEWS THE NATURE OF NATURAL RADIOACTIVITY IN  
THE ATMOSPHERE AND THEN DISCUSSES THE OCCURANCE OF  
URANIUM AND PLUTONIUM IN AIR. THE VARIOUS FISSION  
AND ACTIVATION ISOTOPES AND NUCLEAR INDUSTRY RELATED  
ISOTOPES PRESENT IN THE ENVIRONMENT ARE FINALLY  
DISCUSSED. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 743 826 11/8 1/3  
LOUGHBOROUGH UNIV OF TECHNOLOGY (ENGLAND) DEPT OF CHEMICAL  
ENGINEERING

PARTICLE CONTAMINATION IN HYDRAULIC  
SYSTEMS.

(U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT. JAN-DEC 70,  
JUN 71 227P AKERS, RICHARD J. ; SCARLETT,  
BRIAN ; LLOYD, PHIL J. ; STENHOUSE, JAMES I. T.  
; WARD, ANTHONY S. ;

CONTRACT: F61052-70-C-0007

PROJ: AF-8225

TASK: 822510

MONITOR: AFFDL

TR-71-73

UNCLASSIFIED REPORT

DESCRIPTORS: (\*HYDRAULIC FLUIDS, CONTAMINATION),  
(\*FLIGHT CONTROL SYSTEMS, HYDRAULIC EQUIPMENT),  
PARTICLES, MATHEMATICAL MODELS, MATRICES (MATHEMATICS),  
PARTICLE SIZE, HYDRAULIC FLUID FILTERS, FLUID FLOW,  
SAMPLING, DATA PROCESSING, MICROSCOPY, AUTOMATION, GREAT  
BRITAIN (U)

THE REPORT IS PART OF A WIDE RANGING SURVEY OF THE  
EFFECTS OF CONTAMINATION ON AIRCRAFT FLIGHT CONTROL  
HYDRAULIC SUBSYSTEMS. IT ANALYSES THE CURRENT STATE  
OF THE PROBLEM AND PROPOSES A METHOD BY MEANS OF  
WHICH LONG TERM RESEARCH SHOULD BE DIRECTED TO OBTAIN  
A GENERAL SOLUTION. IT SHOWS HOW THE BEHAVIOUR OF  
PARTICLES IN A COMPLETE HYDRAULIC SYSTEM MAY BE  
REPRESENTED IN TERMS OF A MATHEMATICAL MODEL BASED ON  
MATRIX REPRESENTATIONS OF BOTH PARTICLE  
CONCENTRATIONS AND CHARACTERISTICS OF THE SYSTEM  
COMPONENTS. ALSO REPORTED ON ARE COINCIDENCE  
PROBLEMS IN STREAM SCANNING PARTICLE SIZE ANALYSIS,  
AUTOMATIC IMAGE ANALYSIS AS APPLIED TO PARTICLE SIZE  
ANALYSIS, THE STEREOLOGICAL REPRESENTATION OF  
PARTICLES, THE THEORETICAL EFFICIENCY OF NON-  
ISOKINETIC SAMPLING DEVICES, A NEW METHOD FOR  
REPRESENTING THE EFFICIENCY OF A FILTER, AND  
TECHNIQUES FOR ANALYSING THE COMPOSITION OF PARTICLES  
IN A FLUID. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 744 048 13/2 21/5

ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AIR FORCE  
STATION TENN

MEASUREMENT OF POLLUTANT EMISSIONS FROM AN  
AFTERBURNING TURBOJET ENGINE AT GROUND  
LEVEL. PART I. PARTICULATE  
EMISSIONS. (U)

DESCRIPTIVE NOTE: FINAL REPT. 23 MAR-13 MAY 71,  
JUN 72 56P GEARHART, J. W. BENEK, J.

A. ;

REPT. NO. AFDC-TR-72-64

CONTRACT: F40600-72-C-0003

PROJ: AF-3066, ARO-RW-5139

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH ARO,  
INC., TULLAHOMA, TENN., REPT. NO. ARO-ETF-TR-  
72-29.

DESCRIPTORS: (\*TURBOJET ENGINES, EXHAUST GASES),  
(\*EXHAUST GASES, \*AFTERBURNERS), (\*AIR POLLUTION,  
EXHAUST GASES), PARTICLES, AIRCRAFT ENGINES, TURBOJET  
ENGINES, MEASUREMENT, GAS ANALYSIS (U)  
IDENTIFIERS: \*AIRCRAFT EXHAUST, SMOKE NUMBER, J-85-GE-  
5 ENGINES, J-85 ENGINES (U)

SMOKE EMISSIONS WERE MEASURED IN GENERAL ACCORDANCE  
WITH THE METHODS SPECIFIED IN THE SOCIETY OF  
AUTOMOTIVE ENGINEERS AEROSPACE RECOMMENDED  
PRACTICE 1179. MEASUREMENTS WERE MADE FROM 1 IN.  
TO 32 FT AFT OF THE NOZZLE EXIT ALONG THE ENGINE  
CENTERLINE, AND BOTH HORIZONTALLY AND VERTICALLY  
ACROSS THE EXHAUST PLUME. THE J85-GE-5  
TURBOJET ENGINE WAS OPERATED OVER A POWER RANGE FROM  
IDLE TO MAXIMUM AFTERBURNING. THE EFFECTS OF INLET  
TEMPERATURE AND HUMIDITY ON SMOKE PRODUCTION WERE  
DETERMINED, AND TRENDS OF SMOKE PRODUCTION VERSUS  
POWER SETTING WERE ESTABLISHED. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 744 397 4/1

AIR FORCE CAMBRIDGE RESEARCH LABS L G HANSCOM FIELD  
MASS

INFRARED REFRACTIVE INDEX OF ATMOSPHERIC  
AEROSOL SUBSTANCES.

(U)

DEC 71 6P VOLZ, FREDERIC F. ;  
REPT. NO. AFCRL-72-0300  
PROJ: AF-7621  
TASK: 762110

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN APPLIED OPTICS, V11 N4  
P755-759 APR 72.

DESCRIPTORS: (\*AEROSOLS, REFRACTIVE INDEX), AIR  
POLLUTION, ATMOSPHERES, ABSORPTION SPECTRA, INFRARED  
SPECTRA, PARTICLES, SULFATES  
IDENTIFIERS: ABSORPTIVITY

(U)

(U)

THE OPTICAL CONSTANTS IN THE IR FROM 2.5  
MICROMETERS TO 40 MICROMETERS (4000-250/CM) OF  
DRY NATURAL AEROSOL SUBSTANCES AND OF SEA SALT ARE  
PRESENTED. THE AEROSOL SUBSTANCES WERE OBTAINED  
FROM RAIN AND SNOW WATER: DUST AND SOOT BY  
SEDIMENTATION, AND WATER SOLUBLE SALTS BY  
EVAPORATION. THE SPECTRA OF THE ABSORPTION INDEX  
N' WERE DERIVED FROM TRANSMITTANCE MEASUREMENTS OF  
POTASSIUM PROMIDE DISKS. THE REAL PART N OF THE  
REFRACTIVE INDEX WAS CALCULATED FROM THE SPECULAR  
REFLECTANCE AT NEAR NORMAL INCIDENCE OF DISKS OF PURE  
AEROSOL SUBSTANCE. THE OBSERVED SPECTRAL FEATURES  
ARE RELATED TO CHEMICAL CONSTITUENTS, NOTABLY  
SULFATES AND ALCOHOL SOLUBLE ORGANICS. OPTICAL  
CONSTANTS OF COMPOSITE AND WET AEROSOL ARE DISCUSSED.  
A SIMPLE MODEL CONFIRMS THE MEASURED TRANSMISSION  
OF A COARSE DRY POWDER OF WATER SOLUBLES.  
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 745 069 7/5

CALIFORNIA INST OF TECH PASADENA DEPT OF CHEMISTRY

RADICAL ATTACK ON PROPYLENE AS STUDIED BY  
ELECTRON SPIN RESONANCE,

(U)

JUL 71 6P HEFTER, HEINZ J. ; HECHT,  
THOMAS A. ; HAMMOND, GEORGE S. ;  
CONTRACT: AF-AFOSR-1958-71  
PROJ: AF-9538  
MONITOR: AFOSR TR-72-1255

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN JNL. OF THE AMERICAN  
CHEMICAL SOCIETY, V94 N8 P2793-2797 APR 72.  
SUPPLEMENTARY NOTE: ALSO PUB. AS CALIFORNIA INST. OF  
TECH., PASADENA, DIV. OF CHEMISTRY AND CHEMICAL  
ENGINEERING. CONTRIB-4288.

DESCRIPTORS: (\*PROPENES, CHEMICAL REACTIONS), (\*FREE  
RADICALS, \*PHOTOCHEMICAL REACTIONS), ELECTRON  
PARAMAGNETIC RESONANCE, ALKENES, AEROSOLS, AIR  
POLLUTION

(U)

IDENTIFIERS: \*SMOG, \*HYDROXYL RADICALS

(U)

THE REACTIONS OF PROPYLENE WITH HYDROXYL, PHENYL,  
AND TERT-BUTOXYL RADICALS HAVE BEEN STUDIED IN LIQUID  
PROPYLENE OR MIXTURES OF PROPYLENE WITH ETHYL ETHER.  
HYDROXYL RADICALS ADD TO EITHER SIDE OF THE  
OLEFINIC LINKAGE, PHENYL RADICALS ADD PREDOMINANTLY  
TO THE TERMINAL CARBON ATOM TO GIVE ALKYL RADICALS,  
AND TERT-BUTOXYL RADICALS ABSTRACT HYDROGEN TO FORM  
ALLYL RADICALS. THE DIFFERENT BEHAVIOR OF THESE AND  
OTHER RADICALS REPORTED IN THE LITERATURE TOWARD  
PROPYLENE IS DISCUSSED IN TERMS OF THEIR ELECTRON  
AFFINITIES, AND SOME CONSEQUENCES REGARDING THE  
FORMATION OF AEROSOLS IN POLLUTED AIR ARE PRESENTED.  
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 745 394 13/2  
COLD REGIONS RESEARCH AND ENGINEERING LAB HANOVER N H  
MILITARY FACILITIES AND ENVIRONMENTAL  
STRESSES IN COLD REGIONS. (U)

DESCRIPTIVE NOTE: SPECIAL REPT.,  
JUN 72 25P MURRMANN, R. P. FREED,  
SHERWOOD ;  
REPT. NO. CPREL-SR-173  
PROJ: DA-4-A-062112-A-891

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MILITARY FACILITIES, ENVIRONMENT),  
(\*ARCTIC REGIONS, MILITARY FACILITIES), AIR POLLUTION,  
ICE FOG, WATER POLLUTION, PERMAFROST, OILS, EROSION,  
ALASKA (U)  
IDENTIFIERS: OIL SPILLS, BARROW (ALASKA), PETROLEUM  
PIPELINES, FORT WAINWRIGHT, ENVIRONMENTS, SURVEYS,  
FAIRBANKS (ALASKA) (U)

THE TYPES OF STRESSES IMPOSED BY MILITARY  
ACTIVITIES ON THE ENVIRONMENT ARE NOT WELL KNOWN, NOR  
IS IT POSSIBLE IN MOST CASES TO QUANTIFY OR PREDICT  
THE IMPACT OF STRESSES ON A LONG TERM BASIS. A  
RESEARCH PROGRAM IS CURRENTLY BEING FORMULATED TO  
CORRECT THIS DEFICIENCY. THE REPORT WAS PREPARED  
AS A PRELIMINARY STEP TO IDENTIFYING RESEARCH  
PROBLEMS WHICH ARISE AS A SPECIAL CONSEQUENCE OF  
MILITARY FACILITIES IN COLD REGIONS. THE SUBJECTS  
DISCUSSED INCLUDE: AIR POLLUTION (ICE FOG);  
TERRAIN IMPACTS (EROSION); PERMAFROST; AND  
WATER POLLUTION. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 747 608 21/5 13/2  
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

THE TOXICITY OF EXHAUST GASES FROM THE GAS-  
TURBINE ENGINE OF A DUMP TRUCK, (U)

MAY 72 12P SHTEINBERG, A. S. ;TSVETKOV,  
S. I. ;EVGRAFOV, K. G. ;ZOLOTAREVSKII, L. S.

REPT. NO. FTD-MT-24-1698-71  
PROJ: AF-668A

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED MACHINE TRANS. OF  
AVTOMOBILNAYA PROMYSHLENNOST (USSR) V36 NR P6-7 1970,  
BY CHARLES T. OSTERTAG, JR.

DESCRIPTORS: (\*EXHAUST GASES, \*AIR POLLUTION), (\*GAS  
TURBINES, EXHAUST GASES), (\*CARGO VEHICLES, EXHAUST  
GASES), CONCENTRATION(CHEMISTRY), CARBON MONOXIDE,  
HYDROCARBONS, ALDEHYDES, NITROGEN OXIDES, CARBON BLACK,  
PARTICLES, USSR (U)

IDENTIFIERS: MOTOR TRUCKS, TRANSLATIONS, DUMP  
TRUCKS (U)

RESULTS ARE PRESENT FROM A STUDY CONDUCTED TO  
DETERMINE THE CONCENTRATION OF EXHAUST GASES FROM A  
1200 HP MOTOR VEHICLE GAS TURBINE ENGINE. IT WAS  
FOUND THAT THESE GASES ARE ONE TENTH OF THOSE OF A  
DIESEL ENGINE OF THE SAME HORSEPOWER.  
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 747 675 13/2  
ARMY MATERIEL COMMAND TEXARKANA TEX INTERN TRAINING  
CENTER

INDUSTRIAL PROCESS POLLUTION: A SAFETY  
ASSESSMENT OF AIR POLLUTANTS FOR THE SAFETY  
ENGINEER. (U)

DESCRIPTIVE NOTE: RESEARCH REPT.,  
DEC 71 78P LEE, ROY W. ;

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: MASTER'S THESIS.

DESCRIPTORS: (\*AIR POLLUTION, REVIEWS), MONITORS, LAW,  
GAS DETECTORS, SAMPLERS, PARTICLES, NITROGEN OXIDES,  
SULFUR COMPOUNDS, PUBLIC HEALTH, SAFETY, RESPIRATORY  
DISEASES, METALS, ELECTROSTATIC PRECIPITATION, GAS  
FILTERS, THESES (U)

IDENTIFIERS: LEGISLATION, AIR POLLUTION CONTROL  
EQUIPMENT, AIR POLLUTION DETECTION, AIR POLLUTION  
EFFECTS (ANIMALS), SCRUBBERS, SULFUR DIOXIDE (U)

THE PAPER IS INTENDED TO PROVIDE THE SAFETY  
ENGINEER WITH A BASIC BACKGROUND IN AIR POLLUTION  
CONTROL AND ABATEMENT TECHNOLOGY. IN ADDITION TO  
THE AIR POLLUTION CONTROL AND ABATEMENT TECHNIQUES  
AND METHODOLOGY, DISCUSSIONS OF THE HEALTH EFFECTS OF  
AIR POLLUTANTS, THE CURRENT POLLUTION CONTROL LAWS,  
AND SOME SELECTED INFORMATION AIDS ARE PRESENTED FOR  
THE SAFETY ENGINEER TO SUPPORT HIS EFFORTS IN A  
SAFETY ASSESSMENT OF AIR POLLUTION HAZARDS.  
(AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 747 773 13/2 21/5  
ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AIR FORCE  
STATION TENN

MEASUREMENT OF POLLUTANT EMISSIONS FROM AN  
AFTERBURNING TURBOJET ENGINE AT GROUND  
LEVEL. II. GASEOUS EMISSIONS.

(U)

DESCRIPTIVE NOTE: FINAL REPT. 22 JUN-21 SEP 71,  
AUG 72 65P LAZALIER, G. R. ; GEARHART,  
J. W. ;  
REPT. NO. AFDC-TR-72-20  
CONTRACT: F40600-73-C-0004  
PROJ: AF-3066, ARO-RW-5239

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH ARO,  
INC., TULLAHOMA, TENN. REPT. NO. ARO-ETF-TR-  
72-30. SEE ALSO PART 1, AD-744 048.

DESCRIPTORS: (\*TURBOJET ENGINES, EXHAUST GASES),  
(\*EXHAUST GASES, \*AFTERBURNERS), (\*AIR POLLUTION,  
EXHAUST GASES), (\*GAS DETECTORS, EXHAUST GASES),  
AIRCRAFT ENGINES, CARBON MONOXIDE, CARBON DIOXIDE,  
NITROGEN OXIDES, HYDROCARBONS, MEASUREMENT, GAS  
ANALYSIS, HUMIDITY, WIND, DIFFUSION,  
CONCENTRATION(CHEMISTRY), INFRARED SPECTROSCOPY,  
ELECTROCHEMISTRY, GAS IONIZATION

(U)

IDENTIFIERS: \*AIRCRAFT EXHAUST, PLUMES, FLAME  
IONIZATION DETECTORS, J-85 ENGINES, J-85-GF-5  
ENGINES

(U)

THE PERFORMANCE OF A SAMPLING AND MEASUREMENT  
SYSTEM FOR THE GASEOUS SPECIES OF CARBON MONOXIDE  
(CO), CARBON DIOXIDE (CO<sub>2</sub>), TOTAL HYDROCARBONS  
(C(X)H(Y)), NITROGEN DIOXIDE (NO<sub>2</sub>), AND  
TOTAL OXIDES OF NITROGEN (NO(X)) WAS DEMONSTRATED  
FOR AN AFTERBURNING TURBOJET ENGINE POWER CONDITIONS  
FROM IDLE TO MAXIMUM AFTERBURNING AT GROUND LEVEL.  
DATA WERE OBTAINED, USING A PORTABLE EMISSIONS  
MEASUREMENT SYSTEM, AT POSITIONS RANGING FROM  
IMMEDIATELY AT THE NOZZLE EXIT TO 96 FT AFT OF THE  
NOZZLE EXIT PLANE. A J85-GF-5 ENGINE WAS USED  
TO GENERATE THE GASEOUS EMISSIONS. NONDISPERSIVE  
INFRARED DETECTORS WERE USED FOR CO AND CO<sub>2</sub>  
MEASUREMENTS; A FLAME IONIZATION DETECTOR WAS USED  
FOR C(X)H(Y) MEASUREMENTS; AND ELECTROCHEMICAL  
DEVICES OPERATING ON THE FUEL CELL PRINCIPLE WERE  
USED FOR NO<sub>2</sub> AND NO(X) MEASUREMENTS.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 747 885 13/2 21/2

NATIONAL AVIATION FACILITIES EXPERIMENTAL CENTER ATLANTIC  
CITY N J

RELATIONSHIP BETWEEN THE SAE SMOKE NUMBER  
AND JET AIRCRAFT SMOKE VISIBILITY.

(U)

DESCRIPTIVE NOTE: FINAL REPT. 1970-1971,  
DFC 71 24P SLUSHER, GERALD R. ;  
REPT. NO. FAA-NA-71-25  
PROJ: FAA-502-306-02X  
MONITOR: FAA-RD 71-23

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AIR POLLUTION, EXHAUST GASES), (\*EXHAUST  
GASES, VISIBILITY), (\*AIRCRAFT ENGINES, AIR POLLUTION),  
(\*JET ENGINES, AIR POLLUTION), PARTICLES, LIGHT  
TRANSMISSION, SCATTERING, GAS TURBINES, DENSITY,  
MEASUREMENT

(U)

IDENTIFIERS: \*AIR POLLUTION DETECTION, \*AIRCRAFT  
EXHAUST, PLUMES, \*SMOKE NUMBER, SMOKE, \*JET ENGINE  
EXHAUST

(U)

A METHOD WAS DEVELOPED USING THE SOCIETY OF  
AUTOMOTIVE ENGINEERS (SAE) SMOKE NUMBERS FOR  
CALCULATING THE EXHAUST SMOKE TRANSMISSION FOR  
TURBINE ENGINES, NUMBER OF PLUME PATHS, AND VIEWING  
ANGLES. CRITERIA WERE DEVELOPED RELATING THE SAE  
SMOKE NUMBER TO ENGINE AIRFLOW AND THUS TO ENGINE  
SIZE FOR CONDITIONS OF VISIBLE AND INVISIBLE SMOKE.  
TRANSMISSION OF MULTIPLE PLUMES WAS CALCULATED AND  
IS PRESENTED. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 748 080 13/2  
EDGEWOOD ARSENAL MD

ENVIRONMENTAL INSTRUMENTATION CONFERENCE, U.  
S. ARMY MATERIEL COMMAND HELD AT EDGEWOOD  
ARSENAL, MARYLAND ON 28-29 MARCH 1972.

(U)

DESCRIPTIVE NOTE: SPECIAL PUBLICATION,  
JUL 72 68P HILSMEIER, ALLEN E. ;  
REPT. NO. EA-SP-1800-5

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AIR POLLUTION, DETECTORS), (\*WATER  
POLLUTION, DETECTORS), MONITORS, GAS DETECTORS,  
SCIENTIFIC RESEARCH, CHEMICAL ANALYSIS, EXHAUST GASES,  
PARTICLES, MUNITIONS INDUSTRY, WASTES(INDUSTRIAL),  
CHEMICAL WARFARE AGENTS, SAMPLERS, SYMPOSIA (U)

IDENTIFIERS: \*WATER POLLUTION DETECTION, WATER  
ANALYSIS, \*AIR POLLUTION DETECTION, REMOTE SENSIN,  
JOINT PANEL AMMUNITION DISPOSAL, JPAD(JOINT  
PANEL AMMUNITION DISPOSAL) (U)

THE REPORT CONTAINS ABSTRACTS OF THE PRESENTATIONS  
GIVEN AT THE ENVIRONMENTAL INSTRUMENTATION  
CONFERENCE FOR THE ARMY MATERIEL COMMAND  
WHICH WAS HELD AT EDGEWOOD ARSENAL, MARYLAND ON  
28 AND 29 MARCH 1972. THE MEETING HAD A TWOFOLD  
PURPOSE - TO PRESENT AN UP-TO-DATE ACCOUNT OF  
TECHNICAL INSTRUMENTS CURRENTLY USED IN MONITORING  
AND ANALYZING THE NATION'S AIR AND WATER AND TO  
EXCHANGE IDEAS ABOUT THE FUTURE REQUIREMENTS FOR  
SCIENTIFIC DEVELOPMENTS IN THE ARMY POLLUTION  
ABATEMENT PROGRAMS. REPRESENTATIVES FROM TWENTY  
AMC COMMANDS, AS WELL AS DELEGATES FROM THE  
OFFICE OF THE SURGEON GENERAL, THE ARMY  
CORPS OF ENGINEERS, AND THE ARMY  
ENVIRONMENTAL HYGIENE AGENCY PARTICIPATED IN  
THE TWO-DAY CONFERENCE. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 74P 356 13/2

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF  
ENGINEERING

SIZE DISTRIBUTION, MERCURY/LEAD  
CONCENTRATIONS, AND STOCHASTIC ANALYSIS OF  
SUSPENDED PARTICULATES IN AMBIENT AIR.

(U)

DESCRIPTIVE NOTE: MASTER'S THESIS,  
JUN 72 88P BROWN, DENNIS L. ;  
REPT. NO. GSF/MC/72-1

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AIR POLLUTION, \*PARTICLES),  
(\*LEAD(METAL), AIR POLLUTION), (\*MERCURY, AIR  
POLLUTION), CHEMICAL ANALYSIS, PARTICLE SIZE,  
DISTRIBUTION, DENSITY, CONCENTRATION(CHEMISTRY),  
MILITARY FACILITIES, STATISTICAL TESTS, CORRELATION  
TECHNIQUES, THESES, STOCHASTIC PROCESSES, OHIO (U)

PARTICULATE CONCENTRATION, PARTICLE SIZE  
DISTRIBUTION, AND MERCURY AND LEAD CONCENTRATIONS IN  
ATMOSPHERIC PARTICULATES ON WRIGHT-PATTERSON  
AIR FORCE BASE (WPAFB), OHIO, WERE  
DETERMINED. PARTICULATES WERE FRACTIONATED AS  
FOLLOWS: GREATER THAN 7.0, 3.3 TO 7.0, 2.0 TO 3.3,  
1.1 TO 2.0, AND LESS THAN 1.1 MICRONS IN EQUIVALENT  
AERODYNAMIC DIAMETER. THE DISTRIBUTION OF THE  
PARTICULATE CONCENTRATIONS WAS ANALYZED USING THE  
REVERSE ARRANGEMENTS TEST TO ESTABLISH  
RANDOMNESS, THE KOLMOGOROV-SMIRNOV TEST TO  
COMPARE TEN PROPOSED PROBABILITY DENSITY FUNCTIONS,  
AND THE LIKELIHOOD RATIO TEST TO ISOLATE THE  
FUNCTION BEST DESCRIBING THE DATA. THE AVERAGE  
LEAD CONCENTRATION DURING A 24-HOUR SAMPLING PERIOD  
WAS 1.25 MICROGRAMS/CU M. MERCURY CONCENTRATIONS  
IN PARTICULATES AVERAGED 6.9 NANOGRAMS/CU M, HOWEVER,  
DUE TO INCONSISTENCIES IN THE ANALYTICAL METHOD NO  
CORRELATION COULD BE ESTABLISHED BETWEEN MERCURY  
CONCENTRATION AND PARTICLE SIZE. (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 748 797 4/1

AIR FORCE CAMBRIDGE RESEARCH LABS L G HANSCOM FIELD  
MASS

HOW DRY IS THE SKY. A DECADE LATER AND  
THE SST.

(U)

DESCRIPTIVE NOTE: AIR FORCE SURVEYS IN GEOPHYSICS,  
APR 72 31P SISENWIN, NORMAN ; KANTOR,  
ARTHUR J. ; GRANTHAM, DONALD D. ;  
REPT. NO. AFCRL-AFSIG-240, AFCRL-72-0294  
PROJ: AF-8624  
TASK: 862401

UNCLASSIFIED REPORT

DESCRIPTORS: (\*STRATOSPHERE, \*WATER VAPOR), (\*SUPERSONIC  
AIRCRAFT, AIR POLLUTION), (\*AIR POLLUTION, EXHAUST  
GASES), HUMIDITY, CLOUDS, TRANSPORT AIRCRAFT, COMMERCIAL  
PLANES (U)  
IDENTIFIERS: \*AERONOMY, SUPERSONIC TRANSPORTS (U)

WATER VAPOR THAT WOULD BE ADDED TO THE STRATOSPHERE  
BY A POTENTIAL FLEET OF SSTs IS RELATED TO THE MOST  
ACCEPTED HUMIDITY BALANCE IN THE STRATOSPHERE BASED  
ON GENERAL CIRCULATION CONSIDERATIONS, AND TO  
MOISTURE INTRODUCED INTO THE STRATOSPHERE BY  
VAPORIZATION FROM CONVECTIVE CLOUDS. A MEAN  
RESIDENCE TIME OF 25 MONTHS FOR WATER VAPOR WAS  
CALCULATED FROM GENERAL CIRCULATION VALUES. ON THE  
ASSUMPTION THAT OTHER WATER VAPOR REACHING THE  
STRATOSPHERE WAS AN EQUAL TIME OF RESIDENCE, A FLEET  
OF SSTs WOULD INCREASE HUMIDITY BY 0.5 PPM OR 25  
PERCENT OF THE GENERALLY ACCEPTED 2 PPM EQUILIBRIUM  
VALUE. VAPORIZATION OF ONLY 1 PERCENT OF THE  
CONVECTIVE CLOUD MASS, CALCULATED HEREIN TO ENTER THE  
STRATOSPHERE, WOULD INCREASE ITS MIXING RATIO BY 1  
PPM. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 748 975 4/1

RAND CORP SANTA MONICA CALIF

ON VOLCANIC AND OTHER PARTICULATE TURBIDITY  
ANOMALIES,

(U)

MAR 72 54P DEIRMENDJIAN, D. ;  
REPT. NO. P-4782

UNCLASSIFIED REPORT

DESCRIPTORS: (\*ATMOSPHERES, \*DUST), (\*VOLCANOES,  
\*CLIMATE), PARTICLES, VISIBILITY, OPTICAL PROPERTIES,  
SKY BRIGHTNESS, STRATOSPHERE, AIR POLLUTION, ATMOSPHERIC  
MOTION (U)

THE REPORT REVIEWS INFORMATION ON ANOMALOUS, LONG-  
LIVED CHANGES OF TURBIDITY OVER LARGE PORTIONS OF THE  
EARTH IN ORDER TO ESTIMATE THE AMOUNT AND NATURE OF  
THE TURBID COMPONENTS IN EACH CASE. THIS  
INFORMATION IN TURN MAY BE CORRELATED WITH THE NATURE  
AND MAGNITUDE OF THE CLIMATIC EFFECTS, IF ANY. THE  
REPORT CONCERNS ITSELF WITH THE PARTICLES PRODUCED BY  
RECORDED EXTRAORDINARY VOLCANIC EXPLOSIONS CAPABLE OF  
INJECTING MASSIVE QUANTITIES OF SO-CALLED VOLCANIC  
DUST INTO THE ATMOSPHERE AND THEREBY OF ALTERING  
CONSIDERABLY ITS NORMAL OPTICAL PROPERTIES. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 749 457 13/2

ILLINOIS UNIV URBANA DEPT OF MECHANICAL AND INDUSTRIAL  
ENGINEERING

PREDICTION OF EXHAUST EMISSIONS FROM PRIME  
MOVERS AND SMALL HEATING PLANT FURNACES.

(U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT.,

JUL 72 109P

SORENSEN, SPENCER C. ; STUKEL,

JAMES J. ; HULL, WILLIAM L. ;

CONTRACT: DACA23-70-C-0080

MONITOR: CERL TR-E-1

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AIR POLLUTION, \*EXHAUST GASES),  
(\*COMBUSTION PRODUCTS, AIR POLLUTION), (\*GAS TURBINES,  
EXHAUST GASES), (\*SPARK IGNITION ENGINES, EXHAUST  
GASES), (\*DIESEL ENGINES, EXHAUST GASES), (\*FURNACES,  
COMBUSTION PRODUCTS), PREDICTIONS, PARTICLES, NITROGEN  
OXIDES, SULFUR COMPOUNDS, HYDROCARBONS, CORRELATION  
TECHNIQUES, CARBON DIOXIDE, MATHEMATICAL ANALYSIS,  
OXIDES, CARBON MONOXIDE (U)  
IDENTIFIERS: SMOKE NUMBER, SULFUR DIOXIDE, (U)  
\*EMISSION

THE REPORT IS THE RESULT OF AN INVESTIGATION OF THE  
POSSIBILITIES OF PREDICTING THE EXHAUST EMISSIONS  
FROM VARIOUS TYPES OF ENGINES AND SMALL HEATING PLANT  
FURNACES. THE ENGINES INVESTIGATED INCLUDE SPARK  
IGNITION ENGINES, COMPRESSION IGNITION ENGINES, AND  
GAS TURBINES. BASED ON A SURVEY OF CURRENTLY  
AVAILABLE LITERATURE AND DATA, IT WAS DETERMINED THAT  
CARBON MONOXIDE AND OXIDES OF NITROGEN CORRELATE  
REASONABLY WELL WITH BASIC ENGINE VARIABLES FOR SPARK  
IGNITION AND COMPRESSION IGNITION ENGINES.  
HYDROCARBON EMISSIONS IN THESE ENGINES DO NOT  
CORRELATE WELL, EVEN THOUGH SOME CONSISTENT EFFECTS  
OF VARIABLES WERE FOUND FOR SPARK IGNITION ENGINES.  
RECENT CORRELATIONS OF VARIOUS SMOKE MEASURING  
DEVICES ARE PRESENTED. CORRELATION RELATING  
EMISSIONS OF SULFUR DIOXIDE AND TOTAL OXIDES OF  
NITROGEN FOR SMALL HEATING PLANT FURNACES WITH THE  
GROSS HEAT INPUT FOR OIL-, COAL-, AND GAS-FIRED UNITS  
WERE ESTABLISHED. IN ADDITION, EQUATIONS USED TO  
CALCULATE THEORETICAL CARBON DIOXIDE EMISSIONS FOR  
GASEOUS, LIQUID, AND SOLID FUELS ARE PRESENTED.  
EMISSION FACTORS FOR THESE POLLUTANTS ARE  
PRESENTED. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 749 943 4/1 13/2  
COLORADO STATE UNIV FORT COLLINS FLUID DYNAMICS AND  
DIFFUSION LAB

WIND-TUNNEL MODELING OF FLOW DIFFUSION OVER  
AN URBAN COMPLEX.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,  
MAY 71 84P CHAUDHRY, F. H. ; CERMAK, J.  
E. ;  
REPT. NO. CER70-71FHC-JEC24, THEMIS-CER-TR-17  
CONTRACT: N00014-68-A-0493-0001  
PROJ: NR-062-414

UNCLASSIFIED REPORT

DESCRIPTORS: (\*URBAN AREAS, \*ATMOSPHERIC MOTION), (\*AIR  
POLLUTION, ATMOSPHERIC MOTION), WIND TUNNEL MODELS,  
HEAT, DIFFUSION, TURBULENT BOUNDARY LAYER, WIND, SKIN  
FRICTION, MATHEMATICAL MODELS, DESIGN, URBAN PLANNING,  
INDIANA (U)  
IDENTIFIERS: ATMOSPHERIC DENSITY, DIFFUSION, THEMIS  
PROJECT, TURBULENT DIFFUSION, EDDIES (U)

THE PURPOSE OF THE STUDY WAS TO EXPLORE AND TEST  
THE POTENTIAL OF WIND-TUNNEL MODELING AS AN  
ALTERNATIVE TO THE MORE EXPENSIVE AND TEDIOUS FULL-  
SCALE URBAN DIFFUSION EXPERIMENTS. A MODEL OF THE  
CITY OF FORT WAYNE, INDIANA WAS CONSTRUCTED TO  
A HORIZONTAL SCALE OF 1: 4000 AND STUDIED IN AN  
ENVIRONMENTAL WIND TUNNEL. IF THE ROUGHNESS AND THE  
HEAT-ISLAND EFFECTS ARE MODELLED PROPERLY, AND THE  
APPROACH FLOWS MADE SIMILAR, THE FLOW OVER THE MODEL  
CITY WAS FOUND TO CONFORM TO THAT IN THE FIELD.  
THE PATTERN OF THE HEAT ISLAND OVER FORT WAYNE  
WAS REPRODUCED ALMOST EXACTLY. SIMULATION OF  
DIFFUSION FROM AN AERIAL LINE SOURCE WAS ACCOMPLISHED  
BY TRAVERSING A CONTINUOUSLY EMITTING SOURCE OF  
KRYPTON-85 ACROSS THE CITY. THE MODEL WAS FOUND  
TO GIVE SAME OVERALL PICTURE OF THE EFFECT OF THE  
CITY ON DISPERSION PROCESS AS THAT OBSERVED IN THE  
FIELD. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 751 295 4/1 13/2  
INSTITUTE FOR DEFENSE ANALYSES ARLINGTON VA JASON DIV

STRATOSPHERIC NITRIC OXIDE PRODUCTION FROM  
PAST NUCLEAR EXPLOSIONS AND ITS RELEVANCE  
TO PROJECTED SST POLLUTION. (U)

AUG 72 33P FOLEY, H. M. ; RUDERMAN, M.  
A. ;  
REPT. NO. P-894  
MONITOR: IDA-HQ 72-14452

UNCLASSIFIED REPORT

DESCRIPTORS: (\*STRATOSPHERE, \*NITROGEN OXIDES),  
(\*SUPERSONIC AIRCRAFT, NITROGEN OXIDES), (\*NUCLEAR  
EXPLOSIONS, STRATOSPHERE), (\*EXHAUST GASES, SUPERSONIC  
AIRCRAFT), (\*OZONE, STRATOSPHERE), AIR POLLUTION,  
CONCENTRATION(CHEMISTRY), GAS IONIZATION, CATALYSTS (U)  
IDENTIFIERS: NITROGEN OXIDE(NO), \*AERONOMY (U)

IT IS SHOWN THAT DURING CERTAIN YEARS OF INTENSE  
NUCLEAR TESTING, HIGH-YIELD NUCLEAR EXPLOSIONS SEEM  
TO HAVE INJECTED INTO THE STRATOSPHERE A FEW TIMES 10  
TO THE 34TH POWER NITRIC OXIDE MOLECULES. THIS IS  
VERY SIMILAR TO UPPER ESTIMATES FOR NO GENERATION  
FROM 500 SSTs FLYING FOR A YEAR. LARGE CATALYTIC  
OZONE REDUCTION FROM SUCH NO INJECTION WAS NOT  
OBSERVED IN WORLDWIDE OR LOCAL TOTAL OZONE  
MEASUREMENTS. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 751 439 13/2 6/20  
AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB  
OHIO

NEW FEDERAL AIR QUALITY STANDARDS,

(U)

DEC 71 23P STOPINSKI, ORIN W. ;  
REPT. NO. AMRL-TR-71-120-PAPER-17  
PROJ: AF-6302

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PRESENTED AT THE ANNUAL CONFERENCE  
ON ENVIRONMENTAL TOXICOLOGY (2ND), FAIRBORN,  
OHIO, 31 AUG, 1-2 SEP 71, SPONSORED BY THE  
SYSTEMED CORP., DAYTON, OHIO. SEE ALSO AD-751  
438 AND AD-751 440.

DESCRIPTORS: (\*AIR POLLUTION, STANDARDS), (\*TOXICITY,  
AIR POLLUTION), (\*PUBLIC HEALTH, AIR POLLUTION), LAW,  
NITROGEN OXIDES, SULFUR COMPOUNDS, HYDROCARBONS,  
OXIDIZERS, CARBON MONOXIDE, PARTICLES, MONITORS,  
EXPOSURE (PHYSIOLOGY)

(U)

IDENTIFIERS: LEGISLATION, NITROGEN OXIDE (NO2), AIR  
POLLUTION EFFECTS (ANIMALS), \*AIR POLLUTION STANDARDS,  
GOVERNMENT POLICIES, SULFUR DIOXIDE, JOINT PANEL  
AMMUNITION DISPOSAL, JPAD (JOINT PANEL  
AMMUNITION DISPOSAL)

(U)

THE REPORT DISCUSSES THE CURRENT PROCEDURES FOR  
ESTABLISHING AIR QUALITY STANDARDS, THE BASES FOR  
STANDARDS, AND, FINALLY, PROPOSED AND FINAL  
NATIONAL PRIMARY AND SECONDARY AMBIENT AIR  
QUALITY STANDARDS FOR SULFUR DIOXIDE, PARTICULATE  
MATTER, CARBON MONOXIDE, NONMETHANE HYDROCARBONS,  
PHOTOCHEMICAL OXIDANTS, AND NITROGEN DIOXIDE.  
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 751 440 6/20  
AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB  
OHIO

CHRONIC EXPOSURE STUDIES WITH  
MONOMETHYLHYDRAZINE,

(U)

DEC 71 17P MACEWEN, J. D. ; HAUN, C.  
C. ;  
REPT. NO. AMRL-TR-71-120-PAPER-18  
PROJ: AF-6302

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PRESENTED AT THE ANNUAL CONFERENCE  
ON ENVIRONMENTAL TOXICOLOGY (2ND), FAIRBORN,  
OHIO, 31 AUG, 1-2 SEP 71, SPONSORED BY THE  
SYSTEMED CORP., DAYTON, OHIO. SEE ALSO AD-751  
439 AND AD-751 441.

DESCRIPTORS: (\*METHYL HYDRAZINES, \*TOXICITY),  
PROPELLANTS, THRESHOLDS (PHYSIOLOGY),  
EXPOSURE (PHYSIOLOGY), DOSAGE, RESPIRATION, INDUSTRIAL  
MEDICINE, AIR POLLUTION, ENVIRONMENT, SPACECRAFT,  
LABORATORY ANIMALS, EXPERIMENTAL DATA, HEMATOLOGY,  
ANEMIAS

(U)

THE MANUFACTURE AND USE OF MONOMETHYLHYDRAZINE  
(MMH) AS A ROCKET FUEL HAS INCREASED OVER THE PAST  
10 YEARS. THE ACUTE HEALTH HAZARDS FROM HANDLING  
THIS HIGHLY REACTIVE COMPOUND ARE WELL DEFINED, BUT  
ALTHOUGH ITS USAGE IS INCREASING LITTLE IS KNOWN  
ABOUT ITS CHRONIC EXPOSURE EFFECTS. THE CURRENT  
INDUSTRIAL THRESHOLD LIMIT VALUE (TLV) OF 0.2 PPM  
WAS ESTABLISHED BY ANALOGY WITH HYDRAZINE AND  
UNSYMMETRICAL DIMETHYLHYDRAZINE. A SERIES OF 6-  
MONTH MMH CHRONIC EXPOSURES TO FOUR ANIMAL SPECIES  
WAS UNDERTAKEN TO EVALUATE THE SAFETY FACTOR AND  
APPROPRIATENESS OF THE CURRENT TLV FOR HEALTH OF  
WORKMEN. THE RESULTS OF THESE EXPERIMENTS SHOWED  
THAT MMH PRODUCES A DOSE-RELATED HEMOLYTIC ANEMIA  
WITH HEINZ BODY FORMATION FOR WHICH THERE APPEARS  
TO BE NO THRESHOLD EFFECT LEVEL. THE ANEMIA IS  
REVERSIBLE WITH REMOVAL FROM FURTHER EXPOSURE AT  
LEAST UP TO A LEVEL OF 5 PPM INTERMITTENT EXPOSURE.  
FOR USE IN ESTABLISHING CONTINUOUS EXPOSURE LIMITS  
FOR CONFINED SPACES SUCH AS MISSILE SILOS,  
CONSIDERATION SHOULD BE GIVEN TO VARIATIONS IN  
CONCENTRATION WHICH COULD CONSIDERABLY SHIFT THE  
EXPOSED PEOPLE DOWN THE EFFECT CURVE.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 751 897 6/9

ENVIRONMENTAL HEALTH LAB MCCLELLAN AFB CALIF

THE INDUSTRIAL HYGIENE SURVEY.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,

MAY 72 41P BURNETT, RONALD D. ;

REPT. NO. EHL-M-72M-11

PROJ: EHL-OBC-209

UNCLASSIFIED REPORT

DESCRIPTORS: (\*HYGIENE, SYMPOSIA), (\*INDUSTRIAL  
MEDICINE, HYGIENE), SAFETY, PROTECTIVE CLOTHING,  
HAZARDS, RESPIRATION, VENTILATION, AIR POLLUTION,  
CHEMICAL CONTAMINATION, WATER POLLUTION, ENVIRONMENT,  
MILITARY REQUIREMENTS, MILITARY MEDICINE (U)

IDENTIFIERS: \*INDUSTRIAL HYGIENE (U)

THE PAPER DESCRIBES THE COMPLEXITIES INVOLVES IN  
CONDUCTING A MEANINGFUL INDUSTRIAL HYGIENE SURVEY AND  
IS ILLUSTRATED WITH NUMEROUS PHOTOGRAPHS OF  
ENVIRONMENTAL EVALUATIONS BEING ACCOMPLISHED AT A  
VARIETY OF TYPICAL AIR FORCE INDUSTRIAL  
OPERATIONS. THE PAPER WAS PRESENTED AT THE USAF  
OCCUPATIONAL SAFETY AND HEALTH ACT  
CONFERENCE HELD AT THE AIR FORCE INSPECTION  
AND SAFETY CENTER, NORTON AFB, CALIFORNIA  
ON 18-20 APR 72 TO FAMILIARIZE SAFETY PERSONNEL  
WITH THE FIELD OF INDUSTRIAL HYGIENE.  
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 752 020 6/10 13/3  
ENVIRONMENTAL HEALTH LAB MCCLELLAN AFB CALIF

SOURCE EMISSIONS SAMPLING AND RADIATION  
SURVEY OF PLASMA TORCH, MCCLELLAN AIR  
FORCE BASE, CALIFORNIA.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
JUL 72 17P PETERS, DAVID W. ;  
REPT. NO. EHL-M-72M-13  
PROJ: EHL-AAF-126

UNCLASSIFIED REPORT

DESCRIPTORS: (\*INDUSTRIAL MEDICINE, \*TORCHES), (\*AIR  
POLLUTION, WASTES(INDUSTRIAL)), NOISE, PARTICLES,  
NITROGEN OXIDES, OZONE, CUTTING, HAZARDS, PLASMA MEDIUM,  
VENTING, GAS ANALYSIS (U)  
IDENTIFIERS: \*NOISE POLLUTION, \*PLASMA TORCHES (U)

THE REPORT DESCRIBES THE PROCEDURES AND RESULTS  
OBTAINED FROM SAMPLING THE EMISSIONS FROM A PLASMA  
TORCH CUTTING OPERATION. THE EMISSIONS WERE  
SAMPLED FROM THE STACK USED TO DIRECT THE EXHAUST  
SYSTEM AIR AWAY FROM ADJACENT BUILDINGS. THE  
EXHAUST AIR WAS SAMPLED FOR PARTICULATE MATTER,  
NITROGEN OXIDES, AND OZONE. AN OCTAVE BAND ANALYSIS  
OF THE NOISE EXPOSURE TO THE OPERATOR WAS PERFORMED  
AND A STUDY OF THE RADIATION HAZARDS TO THE OPERATOR  
IS BEING CONDUCTED. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 752 122 13/2 6/5  
ARMY MEDICAL ENVIRONMENTAL ENGINEERING RESEARCH UNIT  
EDGEWOOD ARSENAL MD

PROBLEM DEFINITION STUDY: EVALUATION OF  
HEALTH AND HYGIENE ASPECTS OF LAND DISPOSAL  
OF WASTEWATER AT MILITARY INSTALLATIONS, (U)

AUG 72 40P SORBER, CHARLES A. ; SCHAUB,  
STEPHEN A. ; GUTER, KURT J. ;  
REPT. NO. USAMEERU-73-02  
PROJ: DA-3-A-062110-A-806  
TASK: 3-A-062110-A-80600

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SEWAGE, \*IRRIGATION SYSTEMS), (\*MILITARY  
FACILITIES, SANITARY ENGINEERING), (\*WATER POLLUTION,  
SEWAGE), PUBLIC HEALTH, STANDARDS, SPRAYS, AIR  
POLLUTION, METALS, PESTICIDES, NITROGEN COMPOUNDS,  
BACTERIA, AEROSOLS (U)  
IDENTIFIERS: LIQUID WASTE DISPOSAL, \*SEWAGE DISPOSAL,  
TRACE ELEMENTS (U)

THE UNITED STATES ARMY IS PRESENTLY USING AND  
IS PLANNING TO EXPAND ITS USE OF VARIOUS MODES OF  
LAND DISPOSAL OF TREATED SEWAGE AT INSTALLATIONS  
WITHIN THE UNITED STATES. THE REPORT REVIEWS  
THE CONSIDERATIONS INVOLVED IN USING SEWAGE FOR  
IRRIGATION PURPOSES. DISCUSSED ARE PHYSICAL,  
BIOLOGICAL, AND CHEMICAL ENVIRONMENTAL FACTORS. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 752 534 6/10

ENVIRONMENTAL HEALTH LAB MCCLELLAN AFB CALIF

AIR POLLUTION AND INDUSTRIAL HYGIENE  
EVALUATION OF MAINTENANCE SHOPS, TINKER  
AFB, OKLAHOMA. PART I.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,

OCT 71 67P BURNETT, RONALD D. ;

REPT. NO. EHL-M-71M-21

PROJ: EHL-OAF-113

UNCLASSIFIED REPORT

DESCRIPTORS: (\*INDUSTRIAL MEDICINE, MILITARY  
FACILITIES), (\*AIR POLLUTION, \*MILITARY FACILITIES),  
VENTILATION, JET ENGINES, MAINTENANCE,  
EXPOSURE (PHYSIOLOGY), ORGANIC SOLVENTS, HALOGENATED  
HYDROCARBONS, ETHYLENES, METALS, GAS ANALYSIS,  
PARTICLES, CLEANING, WELDING, AIR FORCE, OKLAHOMA

(U)

IDENTIFIERS: INDOOR AIR POLLUTION, TINKER AIR FORCE  
BASE, ETHYLENE/TRICHLORO

(U)

THE OKLAHOMA CITY AIR MATERIAL AREA  
(OCAMA), TINKER AFB HAS THE MAINTENANCE  
RESPONSIBILITY FOR THE J-57, J-75, TF-33, J-  
79, TF-41, AND TF-30 JET ENGINES. ALL OF THE  
MAJOR INDUSTRIAL PROCESSES ASSOCIATED WITH OVERHAUL  
OF THESE ENGINES ARE LOCATED IN A LARGE AIR  
CONDITIONED BUILDING. THE PRIMARY OBJECTIVES OF  
THE STUDY WERE THE EVALUATION OF POTENTIAL EXPOSURES  
TO WORKERS TO AIRBORNE CONTAMINANTS (INDUSTRIAL  
HYGIENE EVALUATIONS), GENERAL OR AMBIENT  
CONCENTRATIONS OF AIRBORNE CONTAMINANTS, AIR  
POLLUTION POTENTIAL OF PROCESS EXHAUST EMISSIONS,  
AND POSSIBLE CROSS CONTAMINATION BETWEEN PROCESS  
OUTLETS AND FRESH AIR INTAKES RESULTING FROM THE  
MAJOR INDUSTRIAL OPERATIONS LOCATED IN THE NORTH END  
OF THE BUILDING.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 752 539 14/2

ENVIRONMENTAL HEALTH LAB MCCLELLAN AFB CALIF

STUDY ON LABORATORY CERTIFICATION.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,

MAY 72 84P SMITH, FRANCIS S. ; COYNE,

ROBERT V. ;

REPT. NO. EHL-M-72M-9

PROJ: EHL-OBC-212

UNCLASSIFIED REPORT

AVAILABILITY: AVAILABLE IN MICROFICHE ONLY.

DESCRIPTORS: (\*LABORATORIES, AIR FORCE RESEARCH),  
(\*ENVIRONMENT, SCIENTIFIC RESEARCH), WATER POLLUTION,  
AIR POLLUTION, PESTICIDES, CHEMICAL ANALYSIS, INDUSTRIAL  
MEDICINE, QUALITY CONTROL, PERSONNEL (U)

IDENTIFIERS: \*ENVIRONMENTS, \*PUBLIC HEALTH (U)

THE DOCUMENT DISCUSSES THE PROBLEMS OF  
CERTIFICATION FOR ENVIRONMENTAL HEALTH LABORATORIES  
AND PROPOSES THAT THE EPA, ENVIRONMENTAL  
PROTECTION AGENCY ACCOMPLISH THIS TASK. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 752 578 21/7 13/6  
DETROIT UNIV MICH

PISTON ENGINE COMBUSTION PARAMETERS. (U)

DESCRIPTIVE NOTE: FINAL REPT.,  
MAY 72 39P HAMAN, ARTHUR C. ;  
CONTRACT: DAAE07-68-C-2990  
MONITOR: TACOM 11661

UNCLASSIFIED REPORT

DESCRIPTORS: (\*INTERNAL COMBUSTION ENGINES,  
\*COMBUSTION), (\*EXHAUST GASES, INTERNAL COMBUSTION  
ENGINES), (\*AIR POLLUTION, EXHAUST GASES), SPARK  
IGNITION ENGINES, CARGO VEHICLES, VOLUME, FEASIBILITY  
STUDIES, FUEL CONSUMPTION, PARTICLES, NITROGEN OXIDES,  
IGNITION (U)  
IDENTIFIERS: M-151 TRUCKS(1/4-TON), \*VARIABLE  
COMPRESSION RATIO (U)

AN INVESTIGATION WAS MADE INTO THE TECHNICAL  
FEASIBILITY OF THE APPLICATION OF THE VARIABLE  
COMPRESSION RATIO CONCEPT TO THE M-151 1/4 TON  
UTILITY TRUCK ENGINE AND TO DETERMINE THE EFFECT OF  
VARIOUS ENGINE PARAMETERS ON PARTICULATE EMISSIONS. (U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 753 095 13/2 21/5 21/7  
AIR FORCE AERO PROPULSION LAB WRIGHT-PATTERSON AFB  
OHIO

ASSESSMENT OF POLLUTANT MEASUREMENT AND  
CONTROL GOALS FOR MILITARY AIRCRAFT  
ENGINES.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,  
NOV 72 71P BLAZOWSKI, WILLIAM S. ;  
HENDERSON, ROBERT E. ;  
REPT. NO. AFAPL-TR-72-102  
PROJ: AF-3048, AF-3066  
TASK: 304805, 306605

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AIR POLLUTION, EXHAUST GASES), (\*AIRCRAFT  
ENGINES, \*EXHAUST GASES), REVIEWS, AIR FORCE,  
SPECIFICATIONS, STANDARDS, GAS ANALYSIS, SPARK IGNITION  
ENGINES, JET ENGINES, AFTERBURNERS, PARTICLES, CARBON  
MONOXIDE, HYDROCARBONS, NITROGEN OXIDES,  
PERFORMANCE (ENGINEERING), MILITARY REQUIREMENTS (U)  
IDENTIFIERS: AIR POLLUTION STANDARDS, \*AIRCRAFT  
EXHAUST, SMOKE, JET ENGINE EXHAUST (U)

THE PROBLEM OF MASS EMISSIONS FROM AIRCRAFT GAS  
TURBINE ENGINES IS BRIEFLY REVIEWED AND THE ASPECTS  
OF THIS PROBLEM WHICH ARE UNIQUE TO MILITARY AIRCRAFT  
OPERATION ARE DISCUSSED. POLLUTANT MEASUREMENT  
TECHNOLOGY AND THE EXISTING DATA BASE ARE SUMMARIZED  
AND CANDIDATE CONTROL TECHNIQUES ARE IDENTIFIED.  
PROPOSED ENVIRONMENTAL PROTECTION AGENCY  
REGULATIONS FOR AIRCRAFT ENGINE EMISSIONS ARE  
EXAMINED IN TERMS OF THEIR IMPACT ON AND APPLICATION  
TO MILITARY ENGINES. IT IS CONCLUDED THAT THE  
SPECIAL CONSIDERATIONS, BOTH PERFORMANCE AND  
OTHERWISE, WHICH MUST BE AFFORDED TO MILITARY  
AIRCRAFT PROHIBIT DIRECT APPLICATION OF THE EPA  
REGULATIONS. THE REPORT CONCERNS AIR FORCE  
EMISSION LIMITATION GOALS ESTABLISHED IN LIGHT OF  
THESE EFFORTS. MAXIMUM ALLOWABLE IDLE COMBUSTION  
INEFFICIENCY, OXIDE OF NITROGEN EMISSION (1BM/1000  
LBM FUEL), AND SMOKE NUMBER ARE SPECIFIED. THE  
RATIONALE BEHIND USING THESE PARAMETERS, AND THE  
MEANS BY WHICH THE NUMERICAL GOALS WERE DERIVED ARE  
DISCUSSED. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 753 268 4/1 13/2  
COLORADO STATE UNIV FORT COLLINS FLUID DYNAMICS AND  
DIFFUSION LAB

MASS DISPERSION FROM AN INSTANTANEOUS LINE  
SOURCE IN A TURBULENT SHEAR FLOW. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,  
JUN 71 100P PUTTA, SURYA NARAYANA ;  
CERMAK, JACK E. ;  
REPT. NO. CER71-72SNP-JEC1, THEMIS-CER-TR-19  
CONTRACT: N00014-68-A-0493-0001, DAAB07-68-C-0423  
PROJ: NR-062-414, DA-1-T-062111-A-128  
MONITOR: DTC TN-72-606

UNCLASSIFIED REPORT

DESCRIPTORS: (\*ATMOSPHERIC MOTION, MATHEMATICAL MODELS),  
(\*AIR POLLUTION, ATMOSPHERIC MOTION), ATMOSPHERE MODELS,  
DENSITY, TRANSPORT PROPERTIES, EQUATIONS OF MOTION,  
SHEAR STRESSES, STATISTICAL ANALYSIS, TURBULENCE,  
COMPUTER PROGRAMS (U)  
IDENTIFIERS: SHEAR FLOW, THEMIS PROJECT, \*TURBULENT  
DIFFUSION, TURBULENT FLOW (U)

THE REPORT DISCUSSES THE STATISTICAL PROPERTIES OF  
THE DISPERSION OF AIR POLLUTANTS RELEASED FROM AN  
INSTANEOUS LINE SOURCE AND SPECIFIES A REALISTIC  
PROBABILITY DENSITY FUNCTION FOR THE SPATIAL  
DISTRIBUTION OF CONCENTRATIONS WITHIN THE SMOKE PUFF.  
A PROBABLE SHAPE OF SMOKE PUFF IS PRESENTED FOR A  
SOURCE RELEASED AT GROUND LEVEL. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 754 458 13/2

OCEAN AND ATMOSPHERIC SCIENCE INC DOBBS FERRY N Y

ENVIRONMENTAL IMPACT STUDY.

(U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT. 14 APR-31 OCT 72,

NOV 72 420P WOOLF, JULIUS ;

REPT. NO. OAS-TR-72-116

CONTRACT: N00014-72-C-0425, ARPA ORDER-2195

PROJ: NR-089-090

UNCLASSIFIED REPORT

DESCRIPTORS: (\*DEPARTMENT OF DEFENSE, \*ENVIRONMENT),  
SCIENTIFIC RESEARCH, MANAGEMENT PLANNING AND CONTROL,  
MILITARY FACILITIES, STANDARDS, DETECTORS, DETECTORS,  
CHEMICAL ANALYSIS, MONITORS, STRATEGIC MATERIALS, AIR  
POLLUTION, WATER POLLUTION, PUBLIC RELATIONS,  
STRATOSPHERE, ELECTRIC POWER PRODUCTION (U)

IDENTIFIERS: WATER ANALYSIS, \*POLLUTION, \*RESEARCH  
MANAGEMENT, \*ENVIRONMENTS, \*SURVEYS, \*ENVIRONMENTAL  
IMPACT STATEMENTS (U)

THE DEFENSE ADVANCED RESEARCH PROJECTS  
AGENCY'S (ARPA) ENVIRONMENTAL IMPACT  
PROGRAM IS DIRECTED TOWARD IDENTIFYING THOSE  
SCIENTIFIC AND TECHNICAL AREAS NECESSARY TO ACHIEVE  
SATISFACTORY EVALUATION AND ABATEMENT OF THE  
ENVIRONMENTAL IMPACTS OF DEPARTMENT OF DEFENSE  
(DOD) ACTIVITIES. THE REPORT DISCUSSES  
RESEARCH FROM THIS PROGRAM AND INVOLVES HIGH  
TECHNOLOGY PROBLEMS FOR WHICH THERE ARE CURRENT VOIDS  
NOT BEING ADEQUATELY ADDRESSED BY OTHERS AND FOR  
WHICH THE ENVIRONMENTAL EVALUATIONS REQUIRE  
CONSIDERABLE INTER-SERVICE AND INTER-AGENCY  
PARTICIPATION. PRESENTED ARE RECOMMENDATIONS FOR  
NEW FACILITIES AND TECHNIQUES. THESE INCLUDE:  
AN ENVIRONMENTAL IMPACT PREDICTION FACILITY  
TO ASSIST IN EVALUATING IMPACT ON THE ENVIRONMENT AND  
TO PROVIDE A DATA BASE; IMPLEMENTATION OF A MODEL  
BASE FACILITY IN WHICH ALL THE ENVIRONMENTAL FACTORS  
AND NATURAL RESOURCES COULD BE WELL CONTROLLED;  
DEVELOPMENT OF SENSOR AND INSTRUMENTATION  
TECHNIQUES FOR ENVIRONMENTAL MONITORING; STUDY OF  
CRITICAL MATERIALS TO ASSURE A DOD SUPPLY;  
ENVIRONMENTAL MANAGEMENT SO THAT DOD'S  
POLLUTION EFFORTS WILL BE RECOGNIZED BY THE CIVILIAN  
COMMUNITY; AND PILOT PROJECT TO ACHIEVE INSIGHT AND  
KNOW-HOW PRIOR TO THE START OF THE ACTUAL  
ENVIRONMENTAL IMPACT PREDICTION FACILITY. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 754 784 13/2  
STANFORD RESEARCH INST MENLO PARK CALIF

SUPPORT OF ENVIRONMENTAL PROGRAM  
PLANNING.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
OCT 72 391P MACKIN, JAMES L. ; SCHMIDT,  
RICHARD A. ;  
CONTRACT: N00014-72-C-0445, ARPA ORDER-2195  
PROJ: NR-089-091, SRI-1878

UNCLASSIFIED REPORT

DESCRIPTORS: (\*DEPARTMENT OF DEFENSE, \*ENVIRONMENT),  
(\*RESEARCH MANAGEMENT, ENVIRONMENT), SCIENTIFIC  
RESEARCH, NATURAL RESOURCES, AIR POLLUTION, WATER  
POLLUTION, HEAT, ECONOMICS, ELECTRIC POWER PRODUCTION,  
ENERGY, STRATOSPHERE, EXHAUST GASES, PESTICIDES, NOISE,  
SONIC BOOM, WEAPON SYSTEMS, MONITORS (U)  
IDENTIFIERS: WASTE DISPOSAL, NOISE POLLUTION, OILS,  
POLLUTION, REMOVAL, \*POLLUTION, \*RESEARCH MANAGEMENT,  
ROCKET EXHAUST, SOLID WASTE DISPOSAL, HAZARDOUS  
MATERIALS, LAND USE, THERMAL POLLUTION,  
ELECTROMAGNETIC RADIATION HAZARDS, ENVIRONMENTS,  
SURVEYS, ENVIRONMENTAL IMPACT S (U)

PRINCIPAL ENVIRONMENTAL PROBLEM AREAS OF IMPORTANCE  
TO THE DEPARTMENT OF DEFENSE WERE IDENTIFIED AND  
POSSIBLE APPROACHES TO ADVANCED RESEARCH PROJECTS  
DIRECTED TOWARD SOLUTIONS OF THESE PROBLEMS WERE  
SUGGESTED TO PROVIDE PARTIAL SOURCE MATERIAL IN  
SUPPORT OF DEFENSE ADVANCED RESEARCH PROJECTS  
AGENCY'S RESEARCH PROGRAM PLANNING. TOPICS  
REGARDING ENVIRONMENTAL IMPACT ANALYSIS, RESOURCES  
MANAGEMENT, AIR QUALITY, WATER QUALITY, MATERIALS  
HANDLING AND DISPOSAL, DATA MANAGEMENT AND SPECIAL  
PROBLEMS WERE INCLUDED. FOR EACH TOPIC,  
INFORMATION WAS ORGANIZED ACCORDING TO STATEMENT OF  
THE PROBLEM, STATE OF THE ART, PRESENT ACTIVITIES AND  
ORGANIZATION, IMPLICATIONS FOR THE DOD, AND  
RECOMMENDATIONS FOR FURTHER STUDIES. (AUTHOR) (U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 754 918 4/1 13/2 7/4  
LOCKHEED MISSILES AND SPACE CO PALO ALTO CALIF PALO ALTO  
RESEARCH LAB

STUDY OF HIGH-ALTITUDE AIRCRAFT WAKE  
DYNAMICS. TASK I. PROBLEM DEFINITION. (U)

DESCRIPTIVE NOTE: FINAL REPT.,  
DEC 72 208P HOSHIZAKI, H. ;CONTI, R. J.  
;ANDERSON, L. B. ;REDLER, K. O. ;MEYER, J.  
W. ;

CONTRACT: DOT-OS-20082  
MONITOR: DOT-TST 90-3

UNCLASSIFIED REPORT

DESCRIPTORS: (\*EXHAUST GASES, \*STRATOSPHERE),  
(\*CONDENSATION TRAILS, REACTION KINETICS), (\*JET  
AIRCRAFT, CONDENSATION TRAILS), OZONE, WAKE, VORTICES,  
SUPERSONIC AIRCRAFT, NITROGEN OXIDES, CARBON MONOXIDE,  
HYDROCARBONS, TURBULENCE, ALDEHYDES, PHOTOCHEMICAL  
REACTIONS, THERMOCHEMISTRY, ATMOSPHERE MODELS, AIR  
POLLUTION, SULFUR COMPOUNDS, FREE RADICALS, DIFFUSION,  
FLUID MECHANICS (U)  
IDENTIFIERS: AERONOMY, ATMOSPHERIC DENSITY,  
DIFFUSION (U)

THE PURPOSE OF THE HIGH-ALTITUDE AIRCRAFT  
WAKE DYNAMICS STUDY HAS BEEN TO INVESTIGATE THE  
CHEMICALLY REACTING WAKE OF AN AIRCRAFT FLYING AT  
SUBSONIC AND SUPERSONIC VELOCITY IN THE UPPER  
TROPOSPHERE AND STRATOSPHERE. THIS IS OF INTEREST  
BECAUSE OF THE EFFECTS THESE EXHAUST GASES COULD HAVE  
UPON THE CHEMICAL BALANCE IN THE STRATOSPHERE. IN  
THE STUDY, THE CHEMICAL AND FLUID MECHANICAL  
BEHAVIORS OF IMPORTANT EMISSION SPECIES WERE TRACED  
FROM THE TIME THE SPECIES EXITED THE ENGINE EXHAUST  
NOZZLE TO THE TIME AIRCRAFT-INDUCED PERTURBATIONS TO  
THE ATMOSPHERIC ENVIRONMENT WERE NO LONGER IMPORTANT.  
THE IMPORTANT FEATURES OF CHEMICALLY REACTING  
AIRCRAFT WAKES HAVE BEEN IDENTIFIED. THE AIRCRAFT  
WAKE IS MODELED IN TERMS OF THE JET REGIME (WAKE  
AGE APPROXIMATELY 10 SEC) VORTEX REGIME  
(APPROXIMATELY 100 SEC) AND THE WAKE DISPERSION  
REGIME (APPROXIMATELY 100 SEC). THE IMPORTANT  
THERMOCHEMICAL REACTIONS WERE FOUND TO TAKE PLACE IN  
THE JET REGIME. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 757 059 4/1 13/2  
INSTITUTE FOR DEFENSE ANALYSES ARLINGTON VA

ON THE PROBLEM OF ELIMINATING NITRIC OXIDE  
FROM JET-ENGINE EXHAUST,

(U)

AUG 72 7P CHAMBERLAIN, J. W. ;  
REPT. NO. N-815  
MONITOR: IDA/HQ 72-14447

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SUPERSONIC AIRCRAFT, \*EXHAUST GASES),  
(\*AIR POLLUTION, EXHAUST GASES), (\*STRATOSPHERE,  
\*OZONE), (\*NITROGEN OXIDES, STRATOSPHERE), REACTION  
KINETICS, EXCITATION, ATOMS, OXYGEN, PHOTOCHEMICAL  
REACTIONS

(U)

IDENTIFIERS: NITROGEN OXIDE(N2O), \*NITROGEN OXIDE(NO),  
ATOMS, OXYGEN, \*AERONOMY

(U)

THE REPORT DISCUSSES THE POSSIBILITY THAT NITRIC  
OXIDE (NO) IN THE EXHAUST OF A FLEET OF SSTs  
COULD SERIOUSLY AFFECT THE OZONE EQUILIBRIUM OF THE  
STRATOSPHERE. IN THIS CONNECTION IT HAS BEEN  
SUGGESTED THAT ARTIFICIAL EXCITATION (VIBRATIONAL  
OR ELECTRONIC) OF NO IN THE COMBUSTION CHAMBER  
COULD INCREASE ITS REACTION RATE SO THAT NO IS  
CONVERTED INTO THE MORE INERT N2. THE MAXIMUM  
RATE THAT COULD LIKELY BE THUS OBTAINED SEEMS  
INADEQUATE TO DEplete THE NO ABUNDANCE APPRECIABLY.  
HOWEVER, THERE ARE STILL UNCERTAINTIES IN THE  
PARAMETERS AND THE MECHANISM CANNOT BE TOTALLY  
DISCOUNTED. (AUTHOR)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 757 487 4/2 13/2  
EMMANUEL COLL BOSTON MASS ORIENTAL SCIENCE RESEARCH  
LIBRARY

ENVIRONMENTAL POLLUTION AND CLIMATIC CHANGE,

(U)

JAN 73 44P NAKAJIMA, CHOTARO ;  
REPT. NO. EMM-73-282, 73-1  
CONTRACT: F19628-71-C-0121  
MONITOR: AFCRL, AFCRL TR-73-0010, TRANS-101

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF TENKI (JAPAN) V18 N9  
P453-474 1971.

DESCRIPTORS: (\*AIR POLLUTION, \*CLIMATE), AEROSOLS,  
CARBON MONOXIDE, CARBON DIOXIDE, LEAD(METAL), COOLING,  
JAPAN, SNOW (U)  
IDENTIFIERS: \*CLIMATIC CHANGES, TRANSLATIONS (U)

THE PAPER DISCUSSES ENVIRONMENTAL POLLUTION AND  
CLIMATIC CHANGE. DISCUSSIONS BEGIN ON ATMOSPHERIC  
POLLUTION ON A GLOBAL SCALE, FOLLOWED BY  
ANTHROPOGENIC MODIFICATION OF GLOBAL CLIMATE,  
NUMERICAL EXPERIMENT OF CLIMATIC CHANGE, COOLING IN  
THE NORTHERN HEMISPHERE, ENVIRONMENTAL INFLUENCE ON  
THE JAPAN CLIMATE, CLIMATIC VARIATION RELATED TO  
THE MASS BALANCE OF PRENNIAL SNOW PATCHES, AND  
SECULAR VARIATION OF AIR TEMPERATURE AND HUMIDITY IN  
SOME SUBURAN LOCALITIES. FINALLY, THE GENERALITIES  
OF ARTIFICIAL CLIMATE CONTROL ARE PRESENTED.  
(AUTHOR)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 757 860 13/2  
ENVIRONMENTAL HEALTH LAB MCCLELLAN AFB CALIF

AIR POLLUTANT EMISSIONS FROM JP-4 FIRES  
USED IN FIRE FIGHTING TRAINING.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
NOV 71 21P SUGGS, HARRY J. ;  
REPT. NO. EHL-M-71M-23  
PROJ: EHL-M-AAF-121

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AIR POLLUTION, FIRES), (\*FIRES, \*JET  
ENGINE FUELS), SAMPLING, PARTICLES, CARBON DIOXIDE,  
CARBON MONOXIDE, HYDROCARBONS, TRAINING DEVICES,  
MILITARY FACILITIES, COMBUSTION PRODUCTS  
IDENTIFIERS: JP-4 FUEL, \*EMISSION

(U)

(U)

SAMPLING WAS CONDUCTED AT THE FIRE TRAINING  
FACILITY AT TREASURE ISLAND NAVAL STATION  
TO DETERMINE EMISSION FACTORS APPLICABLE TO THE JP-  
4 FIRES USED IN AIR FORCE FIRE TRAINING  
EXERCISES. SAMPLING METHODS AND DATA ANALYSIS IS  
SHOWN. TOTAL POLLUTANT EMISSIONS ARE NEARLY A HALF  
POUND FOR EVERY POUND OF FUEL CONSUMED, WITH  
PARTICULATES AND CARBON MONOXIDE CONSTITUTING THE  
PREDOMINANT MASS FRACTION. (AUTHOR)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 757 862 13/2  
ENVIRONMENTAL HEALTH LAB MCCLELLAN AFB CALIF

NOISE AND AIR POLLUTION EMISSIONS FROM  
NOISE SUPPRESSORS FOR ENGINE TEST STANDS AND  
AIRCRAFT POWER CHECK PADS. (U)

DESCRIPTIVE NOTE: FINAL REPT.,  
JAN 72 138P BURNETT, RONALD D. ;  
REPT. NO. EHL-M-71M-19  
PROJ: EHL-M-AAF-127

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AIR POLLUTION, \*TURBOJET ENGINES), (\*JET  
ENGINE NOISE, TURBOJET ENGINES), SUPPRESSORS, CAPTIVE  
TESTS, SAMPLING, TEST EQUIPMENT, CARBON DIOXIDE, CARBON  
MONOXIDE, HYDROCARBONS, OXYGEN, NITROGEN OXIDES,  
PARTICLES, EXHAUST GASES, GAS FLOW, VELOCITY,  
ATMOSPHERIC PRECIPITATION, WIND, JET FIGHTERS, MILITARY  
FACILITIES (U)  
IDENTIFIERS: NOISE REDUCTION, NOISE REDUCTION,  
ACOUSTIC MEASUREMENT, PLUMES, F-4 AIRCRAFT, F-4C  
AIRCRAFT, F-111A AIRCRAFT, J-79-17 ENGINES, TF-30  
ENGINES, \*EMISSION (U)

THE REPORT PRESENTS IN DETAIL THE RESULTS OF THE  
ENVIRONMENTAL POLLUTION STUDIES OF THE A/F 32A-  
13, A/F 32A-14, AND A/F 32T-2 JET ENGINE  
AND AIRCRAFT NOISE SUPPRESSORS. DETAILED  
DESCRIPTIONS OF THE SAMPLING AND MEASUREMENT METHODS  
USED DURING THESE STUDIES AS WELL AS REFINED JET  
ENGINE EMISSIONS FACTORS, DESCRIPTIONS OF EXHAUST  
PLUME FORMATION, AND DISCUSSIONS OF DOWNWIND RAINOUT  
OF LIQUID DROPLETS FROM THE EXHAUST PLUME ARE  
PRESENTED. THE NOISE DATA OBTAINED ARE ALSO  
PRESENTED BUT UNLIKE THE AIR POLLUTION DATA WILL HAVE  
LITTLE GENERAL APPLICATION. HOWEVER, THE NOISE  
DATA WILL BE OF USE TO THOSE BASES ANTICIPATING OR  
CURRENTLY USING THE NOISE SUPPRESSORS STUDIED. THE  
REPORT ALSO PROVIDES DATA TO BE USED FOR DETERMINING  
THE IMPACT OF ENGINE TESTING ON LOCAL AIR QUALITY. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 757 927 4/1  
AIR FORCE CAMBRIDGE RESEARCH LABS L G HANSCOM FIELD  
MASS

TRANSPORT MEASUREMENTS IN THE STRATOSPHERE,

(U)

JAN 73 16P ROSENBERG, NORMAN W. ; GOOD,  
ROBERT E. ; SIMMERMAN, SAMUEL P. ;  
REPT. NO. AFCRL-TR-73-0021

UNCLASSIFIED REPORT

AVAILABILITY: AVAILABLE IN MICROFICHE ONLY.

SUPPLEMENTARY NOTE: PRESENTED AT THE CONFERENCE ON THE  
CLIMATIC IMPACT ASSESSMENT PROGRAM (2ND),  
SPONSORED BY DEPARTMENT OF TRANSPORTATION, CAMBRIDGE,  
MASS., 14-17 NOV 72.

DESCRIPTORS: (\*STRATOSPHERE, TRANSPORT PROPERTIES),  
ATMOSPHERIC MOTION, DIFFUSION, AIR POLLUTION, EXHAUST  
GASES, JET TRANSPORT PLANES, WIND, OZONE, ATMOSPHERIC  
TEMPERATURE (U)

IDENTIFIERS: WIND VELOCITY (U)

THE OBJECTIVE OF THE STUDY IS TO DETERMINE THE  
ATMOSPHERIC TRANSPORT PROCESSES IN THE 15-30 KM  
ALTITUDE REGION WHERE SST EMISSION PRODUCTS ARE  
DEPOSITED. THE EXPERIMENTS ARE DESIGNED TO PROVIDE  
SIMULTANEOUS MEASUREMENTS OF TEMPERATURE, WIND  
VELOCITIES AND OZONE CONCENTRATION. THE EDDY  
DIFFUSION COEFFICIENT WILL BE ESTIMATED INDEPENDENTLY  
FROM WIND SHEAR FLUCTUATIONS, PHOTOGRAPHIC TRAIL  
IMAGE DENSITY FLUCTUATIONS, AND TEMPERATURE  
FLUCTUATIONS. (AUTHOR MODIFIED ABSTRACT) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 758 325 13/2

FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

PROCESSING AND ANALYZING OBSERVATIONS ON AIR  
POLLUTION IN CITIES,

(U)

MAR 73 12P SONEKIN, L. P. ; CHALIKOV, D.

V. ;

REPT. NO. FTD-HT-23-145-73

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF GLAVNAYA  
GEOFIZICHESKAYA OBSERVATORIYA, LENINGRAD. TRUDY  
(USSR) N207 P51-55 1968, BY MARILYN OLACHEA.

DESCRIPTORS: (\*AIR POLLUTION, USSR), (\*URBAN AREAS, AIR  
POLLUTION), DUST, SULFUR COMPOUNDS,  
CONCENTRATION(CHEMISTRY), STATISTICAL ANALYSIS, PERIODIC  
VARIATIONS (U)

IDENTIFIERS: \*LENINGRADUSSR), \*MOSCOWUSSR), SULFUR  
DIOXIDE, TRANSLATIONS (U)

RESULTS ARE GIVEN FROM ANALYZING MATERIALS ON THE  
AIR POLLUTION OF THE CITIES OF MOSCOW AND  
LENINGRAD FOR THE PERIOD COVERING 1961-1964. THE  
METEOROLOGICAL CHARACTERISTICS WERE OBTAINED FROM THE  
OBSERVATIONS OF HYDROMETEOROLOGICAL STATIONS.

ALTOGETHER ABOUT SEVEN THOUSAND OBSERVATIONS WERE  
USED ON THE CONCENTRATION OF DUST AND SULFUR DIOXIDE  
IN THE AIR; OF THIS NUMBER, THERE WERE APPROXIMATELY  
TWO THOUSAND OBSERVATIONS FOR LENINGRAD AND ABOUT  
FIVE THOUSAND FOR MOSCOW. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 758 587 13/2

RUTGERS - THE STATE UNIV NEW BRUNSWICK N J EAGLETON INST  
OF POLITICS

COMPARISON OF MOBILE SOURCE EMISSION FROM  
AIRCRAFT, AUTOMOBILES, BUSES, TRUCKS,  
RAILROADS, AND ELECTRIC TRAINS (PROJECT  
EAGLE).

(U)

DESCRIPTIVE NOTE: FINAL REPT. MAR-DEC 72,  
DEC 72 450P BRIGHT, COOPER ; LAMMINEN,  
TOIVO ; HANKO, KENNETH ; MULLALY, JAMES ;  
CONTRACT: DOT-FA72WA-2877  
MONITOR: FAA-EQ 73-2

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AIR POLLUTION, \*TRANSPORTATION),  
AIRCRAFT, PASSENGER VEHICLES, CARGO VEHICLES, RAILROADS,  
CARBON MONOXIDE, HYDROCARBONS, NITROGEN OXIDES,  
OXIDIZERS, PARTICLES, SULFUR COMPOUNDS, PREDICTIONS,  
TABLES (DATA) (U)  
IDENTIFIERS: \*ABATEMENT, \*AIR POLLUTION, AUTOMOBILES,  
BUSES (VEHICLES), COMPARISON, TRUCKS, EAGLE PROJECT,  
EMISSION (U)

THE STUDY COMPARES MOBILE SOURCE EMISSIONS FROM  
AIRCRAFT, AUTOMOBILES, BUSES, TRUCKS, RAILROADS, AND  
ELECTRIC TRAINS WITHIN THE CONTINENTAL UNITED  
STATES DURING THE PERIOD 1940-1980. THIS  
INCLUDES AIR POLLUTION CREATED BY OPERATIONS OF AIR  
CARRIERS AND MILITARY AND GENERAL AVIATION AIRCRAFT.  
THE POLLUTANTS CONSIDERED FOR ALL THESE MODES OF  
TRANSPORTATION ARE CARBON MONOXIDE, HYDROCARBONS AND  
NITROGEN OXIDES AND, IN ADDITION, FOR ELECTRIC  
TRAINS, POLLUTANT VALUES FOR SULFUR OXIDES AND  
PARTICULATES. IT IS DEMONSTRATED THAT FOR THE  
PERIOD 1940-1980 PUBLIC CARRIERS INCLUDING AIR  
TRANSPORTATION SHOW SIGNIFICANTLY LESS AIR POLLUTION  
THAN AUTOS BOTH IN GRAMS PER PASSENGER MILE AND TOTAL  
TONS. (AUTHOR MODIFIED ABSTRACT) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 759 811 7/4

ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER CHARLOTTESVILLE  
VA

DETERMINATION OF OIL AEROSOLS IN AIR,

(U)

MAR 73 6P ANDRONOV, B. E. ;

REPT. NO. FSTC-HT-23-1841-72

PROJ: FTD-T70-23-01

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF NAUCHNYE RABOTY  
INSTITUTOV OKHRANY TRUDA UTSSPS, N44 P92-95 1966  
(SIC).

DESCRIPTORS: (\*OILS, \*GAS ANALYSIS), (\*AEROSOLS, GAS  
ANALYSIS), (\*DUST, GAS ANALYSIS), AIR POLLUTION, GAS  
FILTERS, ACETIC ACID, USSR (U)

IDENTIFIERS: \*AIR POLLUTION DETECTION,  
TRANSLATIONS (U)

A METHOD IS DESCRIBED FOR DETERMINING OIL AEROSOLS  
IN AIR IN WHICH THE FILTER THAT COLLECTS THE SAMPLE  
IS TREATED WITH SULFURIC ETHER. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 759 856

4/1

AIR FORCE CAMBRIDGE RESEARCH LABS L G HANSCOM FIELD  
MASS

STRATOSPHERIC AEROSOL MEASUREMENTS WITH  
IMPLICATIONS FOR GLOBAL CLIMATE,

(U)

AUG 72 11P ELTERMAN, LOUIS ; TOOLIN,

ROBERT B. ; ESSEX, JOHN D. ;

REPT. NO. AFCRL-TR-73-0250

PROJ: AF-7621

TASK: 762108

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN APPLIED OPTICS, V12 N2  
P330-337 FEB 73.

DESCRIPTORS: (\*STRATOSPHERE, AEROSOLS), DENSITY,  
CLIMATE, LIGHT TRANSMISSION, ATMOSPHERES, AIR  
POLLUTION

(U)

THE AUTHORS PRESENT MEASUREMENT RESULTS OBTAINED IN  
NEW MEXICO WITH BISTATIC OPTICAL PROBING OF THE  
ATMOSPHERE USING A SEARCHLIGHT BEAM. THE DATA  
YIELD VERTICAL PROFILES OF THE AEROSOL ATTENUATION  
COEFFICIENT. BECAUSE THEY APPROXIMATE  
PROPORTIONALITY TO AEROSOL CONCENTRATION, THESE  
PROFILES PROVIDE INFORMATION CONCERNING THE AEROSOL  
LAYER STRUCTURE AND ITS PARAMETERS. DURING A 9-DAY  
PERIOD IN OCTOBER AND NOVEMBER 1970, A SERIES OF  
FORTY-ONE SUCH PROFILES WAS OBTAINED WHICH INCLUDES  
ALTITUDES 12-25 KM, SELECTED FOR STUDY BECAUSE OF THE  
RELATIVELY HIGH AEROSOL CONTENT OF THIS STRATOSPHERIC  
REGION AND ITS RELATION TO GLOBAL CLIMATE. THE MEAN  
STRATOSPHERIC AEROSOL DISTRIBUTION FOR THIS PERIOD IS  
DOUBLE LAYERED WITH MAXIMA AT 15.6 KM AND 19.3 KM.  
AN EARLY PHASE OF VOLCANIC DUST INCURSION IS  
EXAMINED. (AUTHOR MODIFIED ABSTRACT)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 760 947 20/4

FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

ASPIRATION OF AN AEROSOL INTO A VERTICAL TUBE  
FROM A FLOW TRANSVERSE TO IT,

(U)

MAY 73 12P LAKTIONOV, A. G. ;  
REPT. NO. FTD-HT-23-160-73

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF FIZIKA AEROSOLEI.  
EKSPERIMENTALNYE USTANOVKI I PRIBORY (USSR) N7 P83-  
87 1967, BY KATHLEEN L. DION.

DESCRIPTORS: (\*AEROSOLS, FLUID FLOW), MEASUREMENT,  
PIPES, FLOW FIELDS, AIR POLLUTION, WIND, TEST EQUIPMENT,  
USSR (U)  
IDENTIFIERS: TRANSLATIONS (U)

A PHOTOELECTRIC INSTALLATION MAKING IT POSSIBLE TO  
STUDY THE CHANGE IN CONCENTRATION OF PARTICLES AS  
THEY ARE ASPIRATED FROM A FLOW INTO A CAPILLARY TUBE  
IS DESCRIBED. AN EMPIRICAL FORMULA IS OBTAINED FOR  
CALCULATING THE COEFFICIENTS OF ASPIRATION OF  
PARTICLES DRAWN FROM THE FLOW INTO A TUBE LYING AT 90  
DEGREES TO THE AXIS OF FLOW. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 761 559 8/6 8/7 8/8 13/2  
ENVIRONMENTAL RESEARCH INST OF MICHIGAN ANN ARBOR

PROCEEDINGS OF THE INTERNATIONAL SYMPOSIUM ON  
REMOTE SENSING OF ENVIRONMENT (8TH) HELD  
AT THE UNIVERSITY OF MICHIGAN AT ANN ARBOR ON  
OCTOBER 2-6, 1972. VOLUME I.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
OCT 72 814P COOK, JERALD J. ;  
REPT. NO. ERIM-195600-1-X  
CONTRACT: AF-AFOSR-2372-72  
PROJ: AF-9751  
TASK: 975104  
MONITOR: AFOSR TR-73-0980

UNCLASSIFIED REPORT

DESCRIPTORS: (\*NATURAL RESOURCES, SCIENTIFIC  
SATELLITES), (\*SYMPOSIA, NATURAL RESOURCES), SPACEBORNE,  
DETECTORS, PHOTOGEOLOGY, PHOTOINTERPRETATION, AERIAL  
PHOTOGRAPHY, ENVIRONMENT, AIR POLLUTION, WATER  
POLLUTION, MAPPING (U)  
IDENTIFIERS: \*REMOTE SENSING, SPACEBORNE PHOTOGRAPHY,  
LAND USE (U)

THESE PROCEEDINGS CONTAIN PAPERS PRESENTED AT THE  
EIGHT INTERNATIONAL SYMPOSIUM ON REMOTE  
SENSING OF ENVIRONMENT, HELD OCTOBER 2ND  
THROUGH 6TH, 1972, ON THE CAMPUS OF THE  
UNIVERSITY OF MICHIGAN. THE SYMPOSIUM WAS  
CONDUCTED BY THE CENTER FOR REMOTE SENSING  
INFORMATION AND ANALYSIS OF THE ENVIRONMENTAL  
RESEARCH INSTITUTE OF MICHIGAN (FORMERLY  
THE UNIVERSITY OF MICHIGAN'S WILLOW RUN  
LABORATORIES) AS A PART OF A CONTINUING PROGRAM  
INVESTIGATING CURRENT ACTIVITIES IN THE FIELD OF  
REMOTE SENSING. PRESENTATIONS INCLUDE THOSE ON THE  
USE OF THIS TECHNOLOGY BY REGIONAL GOVERNMENTAL UNITS  
AND BY FEDERAL GOVERNMENTAL AGENCIES, AS WELL AS  
VARIOUS APPLICATIONS IN MONITORING AND MANAGING THE  
EARTH'S RESOURCES AND MAN'S GLOBAL ENVIRONMENT.  
GROUND-BASED, AIRBORNE, AND SPACEBORNE SENSOR  
SYSTEMS AND MANUAL AND MACHINE-ASSISTED DATA ANALYSIS  
AND INTERPRETATION ARE INCLUDED. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 761 589 13/2  
ARMY WAR COLL CARLISLE BARRACKS PA

ENVIRONMENTAL PROTECTION: IS THE ARMY  
PREPARED TO FIGHT.

(U)

DESCRIPTIVE NOTE: INDIVIDUAL RESEARCH REPT.,  
MAR 73 56P MEEKISON, MALCOLM V. ;

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AIR POLLUTION, ARMY), (\*WATER POLLUTION,  
ARMY), ENVIRONMENT, DEPARTMENT OF DEFENSE, CONTROL (U)  
IDENTIFIERS: LEGISLATION, \*ENVIRONMENTS,  
\*PROTECTION (U)

THE PAPER REVIEWS THE NATURE OF ENVIRONMENTAL  
HAZARDS AND THE INCREASING LEVELS OF POLLUTION FOUND  
IN THE UNITED STATES. PERTINENT ENVIRONMENTAL  
RELATED LEGISLATION, EXECUTIVE ORDERS, AND DOD  
DIRECTIVES, ARE ANALYZED TO DETERMINE THE NATIONAL  
POLICY ON ENVIRONMENTAL PROTECTION. THE ARMY'S  
ENVIRONMENTAL QUALITY PROGRAM IS ADDRESSED TO  
DETERMINE ITS COINCIDENCE AND RESPONSIVENESS TO THE  
NATIONAL POLICIES. (MODIFIED AUTHOR  
ABSTRACT)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 762 061 7/4 13/2 4/1  
NAVAL RESEARCH LAB WASHINGTON D C

DEVELOPMENT OF X-RAY FLUORESCENCE  
SPECTROSCOPY FOR ELEMENTAL ANALYSIS OF  
PARTICULATE MATTER IN THE ATMOSPHERE AND IN  
SOURCE EMISSIONS. PHASE II: EVALUATION OF  
COMMERCIAL MULTIPLE CRYSTAL SPECTROMETER  
INSTRUMENTS.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
JUN 73 13P BIRKS, L. S. ; GILFRICH, J.  
V. ;  
REPT. NO. NRL-7617  
PROJ: NRL-P04-06

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO PB-213 366. SPONSORED IN  
PART BY ENVIRONMENTAL PROTECTION AGENCY.

DESCRIPTORS: (\*AIR POLLUTION, PARTICLES), (\*AEROSOLS, \*X  
RAY SPECTROSCOPY), SENSITIVITY, CRYSTALS, NUCLEAR  
RADIATION SPECTROMETERS (U)  
IDENTIFIERS: FLUORESCENCE, X RAYS, X RAY ANALYSIS, \*X  
RAY SPECTROMETERS, \*AIR POLLUTION DETECTION,  
COMPARISON, TRACE ELEMENTS (U)

FOUR COMMERCIAL MULTIPLE CRYSTAL SPECTROMETER X-RAY  
ANALYZERS WERE EVALUATED FOR USE IN THE ELEMENTAL  
ANALYSIS OF AIR POLLUTION PARTICULATE SAMPLES.  
FOURTEEN TO TWENTY-FOUR ELEMENTS CAN BE MEASURED  
SIMULTANEOUSLY IN THESE INSTRUMENTS. 100 SECOND  
DETECTION LIMITS OF 1 TO 10 NG/SQ CM WERE ACHIEVED  
FOR ABOUT ONE-HALF OF THE ELEMENTS EXAMINED. ANY  
ONE OF THE COMMERCIAL INSTRUMENTS IS CAPABLE OF  
PERFORMING QUANTITATIVE ANALYSIS OF THE PARTICULATE  
MATTER FILTERED OUT OF THE ATMOSPHERE OR SOURCE  
EMISSIONS. SOME ACTUAL POLLUTION SAMPLES WERE  
ANALYZED IN ALL FOUR INSTRUMENTS TO DEMONSTRATE  
SUITABILITY. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 763 119 13/2 21/5  
UNITED AIRCRAFT RESEARCH LABS EAST HARTFORD CONN

ANALYSIS OF JET ENGINE TEST CELL  
POLLUTION ABATEMENT METHODS.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT. 21 FEB 72-21 FEB 73,  
MAY 73 230P ROBSON, F. L. ; KESTEN, A.

S. ; LESSARD, R. D. ;

CONTRACT: F29601-72-C-0049

PROJ: AF-683M

MONITOR: AFWL TR-73-18

UNCLASSIFIED REPORT

DESCRIPTORS: (\*JET ENGINES, \*EXHAUST GASES), (\*AIR  
POLLUTION, JET ENGINES), (\*TEST FACILITIES, AIR  
POLLUTION), CAPTIVE TESTS, COST EFFECTIVENESS, GAS FLOW,  
TEST METHODS, PARTICLES, NITROGEN OXIDES, AIRCRAFT  
ENGINES, FUEL ADDITIVES, METALORGANIC COMPOUNDS, JET  
ENGINE NOISE (U)

IDENTIFIERS: NOISE REDUCTION, \*AIR POLLUTION,  
\*CONTROL, AIR POLLUTION CONTROL EQUIPMENT, SMOKE,  
STATIC TESTS, \*EMISSION (U)

IN ORDER TO ASCERTAIN WHAT METHODS OF EFFLUENT  
TREATMENT WOULD BE APPLICABLE TO JET ENGINE TEST  
CELLS, A STUDY WAS UNDERTAKEN TO ASSESS CURRENT AND  
PROJECTED EXHAUST GAS TREATMENT TECHNOLOGY AND TO  
ESTABLISH THAT TECHNOLOGY WHICH RESULTS IN THE MOST  
EFFECTIVE CLEANUP PER DOLLAR. EMISSION FACTOR DATA  
FOR THE MOST PREVALENT AIR FORCE ENGINES WERE  
GATHERED TO DETERMINE WHAT LEVELS OF POLLUTANTS WERE  
TO BE DEALT WITH. A THEORETICAL MODEL OF A TEST  
CELL AUGMENTOR TUBE WITH LIQUID INJECTION WAS  
DEVELOPED TO AID IN ESTIMATING TOTAL SYSTEM FLOW  
RATES AS A FUNCTION OF ENGINE OPERATING PARAMETERS.  
THE AIR FORCE TEST CELL EMISSION REDUCTION  
PROGRAM CAN BE CHARACTERIZED AS HAVING THREE GOALS  
WHICH ARE DISCUSSED. THE FIRST OR IMMEDIATE GOAL IS  
ONE OF REDUCING VISIBLE EMISSIONS. THE SECOND OR  
NEAR-TERM GOAL INVOLVES MEETING PARTICULATE MASS  
CRITERIA SUCH AS MIGHT BE PROMULGATED BY THE  
ENVIRONMENTAL PROTECTION AGENCY. THE THIRD  
OR FUTURE GOAL WOULD BE CONCERNED WITH MEETING THE  
MASS EMISSION REGULATIONS FOR NOX. (MODIFIED  
AUTHOR ABSTRACT) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 763 371 6/6

NAVAL MEDICAL FIELD RESEARCH LAB CAMP LEJEUNE N C

AN ENVIRONMENTALLY IMPROVED METHOD OF FIRE  
ANT CONTROL FOR HIGH MAINTENANCE AREAS

(U)

JUN 73 10P GROTHAUS, R. H. ; JACKSON, S.  
C. ; HASKINS, J. R. ; SIMS, G. L. , JR;  
PROJ: YR041.16  
TASK: YR041.16.01

UNCLASSIFIED REPORT

DESCRIPTORS: (\*FORMICIDAE, \*INSECT CONTROL),  
(\*PHOSPHIDES, INSECTICIDES), PEST CONTROL, ECOLOGY,  
ENVIRONMENT, CONTAMINATION  
IDENTIFIERS: \*ALUMINUM PHOSPHIDE

(U)

(U)

A STUDY WAS CONDUCTED TO EVALUATE THE USE OF  
ALUMINUM PHOSPHIDE (PHOSTOXIN(R)) FOR FIRE ANT  
CONTROL. A SIMPLE PROBE WAS DEVELOPED TO INJECT  
PHOSTOXIN TABLETS INTO THE MOUNDS. THE USE OF  
SIX TABLETS PER MOUND PROVIDED IN EXCESS OF 90%  
CONTROL. TREATMENT SUCCESS WAS GREATEST WHEN MOUND  
TEMPERATURES WERE ABOUT 70F AND SOIL MOISTURE  
EXCEEDED 50%. THIS TREATMENT METHOD PROVIDED  
GOOD CONTROL QUICKER AND MORE ECONOMICALLY THAN  
CURRENT INDIVIDUAL MOUND TREATMENT PROCEDURES. THE  
PHOSTOXIN DEGRADED WITHIN 72 HOURS, ELIMINATING ANY  
RESIDUAL PESTICIDE TYPE MATERIAL. (AUTHOR)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 763 471 4/1 13/2  
STANFORD RESEARCH INST MENLO PARK CALIF

STRATOSPHERIC ELECTRICITY.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,

APR 73 149P HAKE, RICHARD D. ; PIERCE,

EDWARD T. ; VIEZEE, WILLIAM ;

CONTRACT: N00014-72-C-0259

PROJ: SRI-1724

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SUPERSONIC FLIGHT, STATIC ELECTRICITY),  
(\*STRATOSPHERE, \*STATIC ELECTRICITY), (\*EXHAUST GASES,  
\*SUPERSONIC AIRCRAFT), TEMPERATURE, WAKE, OZONE, WATER  
VAPOR, AIR POLLUTION, CARBON DIOXIDE, ELECTRICAL  
CONDUCTIVITY, COSMIC RAYS, IONS, AEROSOLS (U)

THE MOTIVATION BEHIND THE STUDY DESCRIBED IN THIS  
REPORT IS THE POSSIBLE CLIMATIC IMPACT OF OPERATING A  
FLEET OF SUPERSONIC TRANSPORTS (SSTS). THE  
REPORT FIRST SUMMARIZES INFORMATION ON THE PHYSICAL  
PROPERTIES OF THE STRATOSPHERE AND ON ITS GASEOUS AND  
PARTICULATE TRACE CONSTITUENTS. A CRITICAL REVIEW OF  
EXPERIMENTAL DATA ON STRATOSPHERE ELECTRIFICATION IS  
THEN PRESENTED. INFORMATION IS GIVEN ON PROFILES  
OF CONDUCTIVITY (POSITIVE AND NEGATIVE); SMALL-  
(CLUSTER-) ION DENSITIES (POSITIVE AND  
NEGATIVE); AND ELECTRIC FIELD. SOME OF THE  
EXPERIMENTAL RESULTS ARE SHOWN TO BE SUSPECT. THE  
MORE RELIABLE EXPERIMENTAL RESULTS, OBTAINED BETWEEN  
10 AND 30 KM, INDICATE CONDUCTIVITIES INCREASING  
MONOTONICALLY WITH INCREASING HEIGHT; ELECTRIC FIELDS  
DECREASING MONOTONICALLY AS HEIGHT INCREASES; SMALL-  
ION DENSITIES OF THE ORDER OF THOUSANDS PER CU CM  
WITH A MAXIMUM AT ABOUT 15 KM; LITTLE SPACE CHARGE; A  
CONSTANT VERTICAL AIR/EARTH CURRENT; AND POSITIVE AND  
NEGATIVE SMALL-ION MOBILITIES. FINE- AND LARGER-  
SCALE SPATIAL AND TEMPORAL VARIATIONS ARE  
SUPERIMPOSED UPON THE GENERAL TREND OF THE RESULTS.  
SIMPLE THEORY SHOWS THAT THE MAJOR PHENOMENA OF  
STRATOSPHERIC ELECTRICITY CAN BE MOSTLY EXPLAINED BY  
CONSIDERING ION PRODUCTION BY COSMIC RAYS ALONE, AND  
ION LOSS ONLY BY MUTUAL NEUTRALIZATION  
(RECOMBINATION). IT WAS CONCLUDED THAT  
STRATOSPHERIC ELECTRIFICATION IS LITTLE AFFECTED BY  
GASEOUS CONSTITUENTS, BUT SHOULD BE QUITE RESPONSIVE  
TO CHANGES IN THE NUMBER DENSITY AND SIZE  
DISTRIBUTION OF THE STRATOSPHERIC AEROSOL.  
(MODIFIED AUTHOR ABSTRACT)

(U)

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00M07

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. 00M07

AD- 763 965

4/1

ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER CHARLOTTESVILLE  
VA

ROLE OF DISTRIBUTION MECHANISMS AND SOURCES  
OF AN ATMOSPHERIC AEROSOL (K VOPROSU O ROLI  
MEKHANIZMOV RASPREDELENIYA I ISTOCHNIKOV  
ATMOSFERNOGO AEROZOLYA),

(U)

MAY 72

8P

IVLEV, L. S. ;

REPT. NO. FSTC-HT-23-1735-72

PROJ: FSTC-T7023012301

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF PROBLEMY FIZIKI  
ATMOSFERY (USSR) P240-244 1967, BY FILEEN WEPNER.

DESCRIPTORS: (\*AEROSOLS, SOURCES), AIR POLLUTION, SULFUR  
COMPOUNDS, DIOXIDES, DIFFUSION, PHOTOCHEMICAL REACTIONS,  
USSR (U)

IDENTIFIERS: SULFUR DIOXIDE, TRANSLATIONS (U)

THE ARTICLE ATTEMPTS TO ESTIMATE THE ROLES PLAYED  
BY VARIOUS DISTRIBUTION MECHANISMS OF AN AEROSOL FOR  
VARIOUS ALTITUDES, AND SHOWS THE POSSIBILITY OF  
THEORETICAL CONSTRUCTION OF A MODEL OF THE VERTICAL  
DISTRIBUTION OF AN ATMOSPHERIC AEROSOL, BY DIVIDING  
THE ATMOSPHERE INTO ZONES WHERE DIFFERENT MECHANISMS  
AND SOURCES ARE AT WORK, AND BY MAKING SIMPLIFYING  
ASSUMPTIONS (NON-INTERACTION OF COSMIC MATERIAL  
WITH RESIDUAL AEROSOL, SIMPLIFICATION OF TEMPERATURE  
DEPENDENCE ON ALTITUDE, ETC.). (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 763 968 6/6  
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER CHARLOTTESVILLE  
VA

MEN AND ENVIRONMENT. PRESENT DAY ASPECTS  
OF THE PROBLEMS,

(U)

MAR 73 11P GERASIMOV, I. P. ;  
REPT. NO. FSTC-HT-23-1988-72

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF AKADEMIYA NAUK SSSR.  
IZVESTIYA. SERIYA GEOGRAFICHESKAYA, N1 P5-13  
1971.

DESCRIPTORS: (\*ENVIRONMENT, PROTECTION), PROBLEM  
SOLVING, NATURAL RESOURCES, GEOGRAPHY, EROSION,  
METEOROLOGICAL PHENOMENA, CONTAMINATION, BIOLOGY, USSR,  
REVIEWS (U)  
IDENTIFIERS: TRANSLATIONS (U)

THE AUTHOR ANALYZES THE ROLE AND PLACE OF THE  
RATIONAL USE OF RESOURCES, THE CONSERVATION AND  
TRANSFORMATION OF NATURE IN THE GENERAL PROBLEM OF  
NATURE AND SOCIETY, AND OUTLINES SEVERAL PROBLEMS IN  
CONSTRUCTIVE GEOGRAPHY RELATED TO THE SUBJECT. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 764 247 8/12

COLD REGIONS RESEARCH AND ENGINEERING LAB HANOVER N H

SOLUBLE PARTICULATES IN ICE FROM SITE 2,  
GREENLAND.

(U)

DESCRIPTIVE NOTE: SPECIAL REPT.,

JUL 73 21P LINKLETTER, GEORGE O. ;

REPT. NO. CRREL-SR-188

CONTRACT: NSF-AG-104

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SPONSORED IN PART BY NATIONAL  
SCIENCE FOUNDATION, WASHINGTON, D.C.

DESCRIPTORS: (\*GLACIERS, IMPURITIES), (\*ICE,  
IMPURITIES), PARTICLE SIZE, CHEMICAL ANALYSIS,  
GREENLAND, ALKALI METALS, AEROSOLS, AIR POLLUTION (U)

COLLECTIONS OF SOLUBLE AND INSOLUBLE PARTICLES MADE  
BY SUBLIMATION TECHNIQUES FROM SMALL PIECES OF POLAR  
ICE ARE WELL SUITED FOR MICROSCOPIC AND MICROCHEMICAL  
ANALYSIS. EXAMINATION OF AN 89-CM VERTICAL PROFILE  
OF A POLAR ICE CORE FROM A DEPTH OF 100M AT SITE  
2, GREENLAND, INDICATED NO SEASONAL CYCLE IN THE  
ABUNDANCE OF PARTICLES >2 MICROMETER IN DIAMETER.  
MICROCHEMICAL SPOT TESTS MADE ON INDIVIDUAL  
PARTICLES INDICATED THE PRESENCE OF NH<sup>+</sup>, K<sup>+</sup>,  
CA<sup>2+</sup>, NA<sup>+</sup> AND CL<sup>-</sup>. WHOLE FILTER SPOT  
TESTS FOR K<sup>+</sup> INDICATED NO SYSTEMATIC VARIATION IN  
THE CONCENTRATION OF POTASSIUM-BEARING PARTICLES.  
THE CONCENTRATIONS OF NA<sup>+</sup>, K<sup>+</sup>, CA<sup>2+</sup> AND  
MG<sup>2+</sup> WERE MEASURED IN MELTED FRACTIONS OF THE  
SAME CORE PROFILE BY ATOMIC ABSORPTION  
SPECTROPHOTOMETRY. VARIATION OF THE K<sup>+</sup>  
CONCENTRATION AND VARIATION OF THE NUMBER OF  
POTASSIUM-BEARING PARTICLES PER GRAM OF ICE HAVE A  
CORRELATION COEFFICIENT OF 0.93 OVER THE 21/2 YEARS  
OF ACCUMULATION STUDIED. (MODIFIED AUTHOR  
ABSTRACT)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 764 715 7/4 13/2

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF  
ENGINEERING

DETERMINATION OF STABLE ELEMENTS IN AIR  
POLLUTION PARTICULATES BY NEUTRON ACTIVATION  
ANALYSIS.

(U)

DESCRIPTIVE NOTE: MASTER'S THESIS,  
JUN 73 114P RICHARDSON, JIMMY A. ;  
REPT. NO. GNE/PH/73-4

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AIR POLLUTION, PARTICLES), (\*PARTICLES,  
\*RADIOACTIVATION ANALYSIS), EXPERIMENTAL DESIGN,  
COMPUTER PROGRAMS, LABORATORY EQUIPMENT, STANDARDS,  
THESES, CHEMICAL ANALYSIS (U)  
IDENTIFIERS: \*NEUTRON ACTIVATION ANALYSIS, TRACE  
ELEMENTS, EVALUATION (U)

NEUTRON ACTIVATION ANALYSIS WAS USED TO DETERMINE  
THE QUANTITIES OF 13 ELEMENTS IN SAMPLES OF  
ATMOSPHERIC PARTICULATE MATTER. QUANTITIES RANGED  
FROM 0.35 MICROGRAMS OF SE TO 34 MILLIGRAMS OF  
CA, WHICH WERE 0.0002% TO 15% OF THE SAMPLES BY  
WEIGHT. TWELVE OTHER ELEMENTS WERE IDENTIFIED, BUT  
NOT QUANTIFIED. AN 80-CU CM LITHIUM-DRIFTED  
GERMANIUM DETECTOR WITH A RESOLUTION OF 2.2 KEV  
(FWHM) AT 1.33 MEV AND A 4096-CHANNEL ANALYZER  
WERE USED FOR DETECTION AND COUNTING OF GAMMA  
RADIATION. DATA WERE ANALYZED BY SAMPO, A CDC  
6600 COMPUTER PROGRAM; DETAILS ON THE USE OF SAMPO  
ARE INCLUDED. TECHNIQUES AND METHODS OF SAMPLE  
COLLECTION, SAMPLE PREPARATION IN QUARTZ AND  
POLYETHYLENE AMPOULES, AND DATA REDUCTION ARE  
REPORTED. (MODIFIED AUTHOR ABSTRACT) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 764 717 21/5 13/2 4/1  
ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AIR FORCE  
STATION TENN

MEASUREMENT OF EXHAUST EMISSIONS FROM A 185-  
GE-58 ENGINE AT SIMULATED HIGH-ALTITUDE  
SUPERSONIC FREE-STREAM FLIGHT  
CONDITIONS.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT., 15 DEC 72-10 JAN  
73,

JUL 73 139P GERMAN, R. C. ; HIGH, M. D.  
; ROBINSON, C. E. ;  
REPT. NO. AEDC-TR-73-103  
CONTRACT: DOT-AS-20024  
PROJ: ARO-PA038, ARO-PB038  
MONITOR: FAA-RD 73-92

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH ARO,  
INC., TULLAHOMA, TENN. REPT. NO. ARO-PWT-TR-  
73-49.

DESCRIPTORS: (\*TURBOJET ENGINES, \*EXHAUST GASES),  
(\*STRATOSPHERE, EXHAUST GASES), (\*AIR POLLUTION,  
STRATOSPHERE), CLIMATE, GAS ANALYSIS, CAPTIVE TESTS,  
SUPERSONIC COMBUSTION, TABLES(DATA), CARBON DIOXIDE,  
CARBON MONOXIDE, HYDROCARBONS, NITROGEN OXIDES,  
PARTICLES

(U)

IDENTIFIERS: J-85 ENGINES, J-85-GE-5 ENGINES

(U)

EXHAUST EMISSIONS WERE MEASURED IN THE PLUME OF A  
J85-GE-5 TURBOJET ENGINE AS PART OF AN  
INVESTIGATION TO DETERMINE THE IMPACT ON THE CLIMATE  
OF A FLEET OF SUPERSONIC AIRCRAFT FLYING IN THE  
STRATOSPHERE. MEASUREMENTS WERE MADE FOR BOTH  
MILITARY AND PARTIAL AFTERBURNING POWER AT MACH  
NUMBERS AND SIMULATED ALTITUDES OF MACH 1.6/55,000  
FT AND MACH 2.0/65,000 FT. A CONTINUOUS SAMPLING  
TECHNIQUE WAS USED TO MEASURE CARBON DIOXIDE, CARBON  
MONOXIDE, TOTAL UNBURNED HYDROCARBONS, OXIDES OF  
NITROGEN, AND PARTICULATES. THE EXPERIMENTAL  
RESULTS WERE COMPARED WITH THE CALCULATED EMISSION  
PROFILES AND WERE IN GOOD AGREEMENT. THE RESULTS  
REPRESENT THE ONLY AVAILABLE FULL-SCALE TURBOJET  
ENGINE EMISSION DATA TO DATE WHICH HAVE BEEN OBTAINED  
AT SIMULATED HIGH ALTITUDE WITH A SUPERSONIC EXTERNAL  
STREAM. (MODIFIED AUTHOR ABSTRACT)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 764 987 13/2 21/5  
GENERAL MOTORS CORP INDIANAPOLIS IND DETROIT DIESEL  
ALLISON DIV

INVESTIGATION OF AIRCRAFT GAS TURBINE  
COMBUSTOR HAVING LOW MASS EMISSIONS.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
APR 73 726P TROTH, D. L. ; VERDOUW, A.  
J. ; VERKAMP, F. J. ;  
REPT. NO. ERD-7725  
CONTRACT: DAAJ02-72-C-0005  
PROJ: DA-1-G-162207-AA-71  
TASK: 1-G-162207-AA-7102  
MONITOR: USAAMRDL TR-73-6

UNCLASSIFIED REPORT

DESCRIPTORS: (\*GAS TURBINES, \*AIR POLLUTION), (\*EXHAUST  
GASES, GAS TURBINES), COMBUSTION CHAMBERS, TURBINE  
PARTS, HELICOPTER ENGINES, CARBON MONOXIDE, NITROGEN  
OXIDES, HYDROCARBONS, TESTS, PARTICLES (U)  
IDENTIFIERS: AIR POLLUTION CONTROL EQUIPMENT, \*AIR  
POLLUTION, \*CONTROL, BASELINE MEASUREMENTS (U)

THE OBJECTIVE OF THIS ONE-YEAR PROGRAM WAS TO  
DEVELOP AND DEMONSTRATE EMISSION ABATEMENT TECHNOLOGY  
SUFFICIENT TO OBTAIN A 50% OVERALL REDUCTION IN GAS  
TURBINE ENGINE MASS EMISSIONS (CO, CXHY, NOX  
AND SMOKE) WITH NO INCREASE IN ANY INDIVIDUAL  
POLLUTANT WHEN TESTED OVER A TYPICAL ARMY LIGHT  
OBSERVATION HELICOPTER (LOH) DUTY CYCLE. THE  
SELECTED BASELINE WAS THE ARMY T63-A-5A GAS  
TURBINE ENGINE COMBUSTOR. SEVENTEEN POTENTIAL LOW-  
EMISSION COMBUSTORS, EACH INCORPORATING ONE OR MORE  
OF THE SELECTED CONCEPTS, WERE TESTED TO DETERMINE  
THEIR EMISSION PERFORMANCE. EXPERIMENTAL RESULTS  
INDICATED THAT SEVERAL DESIGNS HAD THE POTENTIAL FOR  
MEETING THE PROGRAM OBJECTIVES. TWO COMBUSTORS  
SELECTED FOR FINAL EXPERIMENTAL EVALUATION WERE THE  
'PRECHAMBER' AND 'MODIFIED CONVENTIONAL.'  
THE LOW-EMISSION FEATURE IN THE 'PRECHAMBER'  
COMBUSTOR WAS PREMIX/PREVAPORIZATION. THE  
'MODIFIED CONVENTIONAL' COMBUSTOR INCORPORATED  
FOUR LOW-EMISSION FEATURES: AIRBLAST FUEL  
ATOMIZATION, DELAYED DILUTION, CONVECTION COOLING,  
AND VARIABLE GEOMETRY. BOTH OF THESE COMBUSTORS  
MET THE EMISSION REDUCTION OBJECTIVES. EXPERIMENTAL  
RESULTS INDICATED THAT BOTH OF THESE LINERS CAN BE  
DEVELOPED TO MEET ALL OTHER CONVENTIONAL T63  
COMBUSTOR REQUIREMENTS, (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 766 648 21/5

ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AIR FORCE  
STATION TENN

EMISSION MEASUREMENTS OF A J93 TURBOJET  
ENGINE.

(U)

DESCRIPTIVE NOTE: FINAL REPT. 8 JUN-31 JUL 72,  
SEP 73 98P DAVIDSON, D. L. ;DOMAL, A.

F. ;

REPT. NO. AEDC-TR-73-132

PROJ: ARO-RA109

MONITOR: FAA-RD 73-66

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH ARO,  
INC., TULLAHOMA, TENN. REPT. NO. ARO-ETF-TR-  
73-46.

DESCRIPTORS: (\*TURBOJET ENGINES, EXHAUST GASES),  
(\*EXHAUST GASES, GAS ANALYSIS), CARBON MONOXIDE, CARBON  
DIOXIDE, NITROGEN OXIDES, HYDROCARBONS, AIR POLLUTION,  
PARTICLES, SIMULATION (U)

IDENTIFIERS: FLIGHT SIMULATION, J-93 ENGINES (U)

EXHAUST GAS EMISSION MEASUREMENTS WERE MADE AT THE  
NOZZLE OF A J93 TURBOJET ENGINE AT SIMULATED FLIGHT  
CONDITIONS FROM SEA-LEVEL STATIC TO MACH 2.0 AT 75,  
000 FT AND MACH 2.6 AT 65,000 FT. REAL TIME  
MEASUREMENTS OF CO, CO2, CXHY, NO, AND  
NOX WERE TAKEN OVER A RANGE OF AFTER-BURNING AND  
NONAFTERBURNING ENGINE POWER SETTINGS USING A GAS  
SAMPLING SYSTEM DESIGNED TO ADHERE TO SAE ARP 1256  
SPECIFICATIONS. IN ADDITION, NO AND OH WERE  
MEASURED IN SITU BY A NARROW-LINE UV SPECTRAL  
ABSORPTION TECHNIQUE. BATCH-TYPE MEASUREMENTS OF  
PARTICULATES AND OTHER TRACE CONSTITUENTS OF THE  
EXHAUST GAS WERE ALSO MADE. MAJOR RESULTS OF THE  
TEST WERE THAT EMISSIONS VARY SIGNIFICANTLY WITH  
COMBUSTOR INLET PRESSURE AND TEMPERATURE AND,  
THEREFORE, WITH MACH NUMBER AND ALTITUDE.  
(MODIFIED AUTHOR ABSTRACT)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 767 077 4/1 4/2  
SYSTEMS CONTROL INC PALO ALTO CALIF

ATMOSPHERIC MODEL SURVEY.

(U)

DESCRIPTIVE NOTE: FINAL REPT. 1 FEB-31 AUG 73,  
AUG 73 221P SCHAIKER, R. B. ; WIRSCHING,  
J. E. ; LAU, R. W. ; PATMORE, J. W. ; BRENNAN,  
R. P. ;

REPT. NO. SCI-5101-1  
CONTRACT: N00014-73-C-0409  
PROJ: NR-061-216, RR023-02  
TASK: RR023-02-01

UNCLASSIFIED REPORT

DESCRIPTORS: (\*ATMOSPHERE MODELS, \*STRATOSPHERE), (\*JET  
TRANSPORT PLANES, \*CLIMATE), AIR POLLUTION,  
PHOTOCHEMICAL REACTIONS, ATMOSPHERIC MOTION, WAKE,  
AEROSOLS, WATER VAPOR, TRANSPORT PROPERTIES, ANALYSIS OF  
VARIANCE, MATHEMATICAL MODELS, STATISTICAL  
DISTRIBUTIONS, REGRESSION ANALYSIS, TIME SERIES  
ANALYSIS, MONTE CARLO METHOD, SOLAR RADIATION, OZONE (U)  
IDENTIFIERS: ATMOSPHERIC CIRCULATION, ATMOSPHERES,  
COMPOSITION (PROPERTY), CLIMATIC CHANGES, SUPERSONIC  
TRANSPORTS, ENVIRONMENTS, SURVEYS (U)

THE REPORT TREATS THE SUBJECT OF ERROR VARIANCE  
ANALYSIS AS AN ADJUNCT TO THE SCIENTIFIC CONTENT OF  
THE FINAL REPORTS AND MONOGRAPHS OF THE CLIMATIC  
IMPACT ASSESSMENT PROGRAM (CIAP). A SURVEY  
OF CIAP MODELLING EFFORTS IS PRESENTED AND  
ASSEMBLED IN ARRAY FORMAT TO ILLUSTRATE THE COMPOSITE  
LINKAGE OF ATMOSPHERIC MECHANISMS. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 768 047 4/2  
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

STUDY OF THE PHYSICOCHEMICAL AND ELECTRICAL  
PROPERTIES OF ATMOSPHERIC AEROSOLS, (U)

OCT 73 15P BELYASHOVA, M. A. ;  
PETRECHUK, O. P. ; SELEZNEVA, E. S. ;  
REPT. NO. FTD-HT-23-67-74

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF VSESOUZNA YA  
KONFERENTSIYA PO FIZIKE OBLAKOV I AKTIVNYM  
VOZDEISTVIYAM. TRUDY (USSR) V8 P84-92 1970, BY  
VICTOR MESENZEFF.

DESCRIPTORS: (\*AEROSOLS, USSR), AMMONIUM COMPOUNDS,  
BICARBONATES, CHEMICAL ANALYSIS,  
CONCENTRATION(CHEMISTRY), PH FACTOR, ELECTRICAL  
CONDUCTIVITY, SULFATES, NITRATES, CHLORIDES, SODIUM,  
POTASSIUM, MAGNESIUM, CALCIUM, AIR POLLUTION,  
ATMOSPHERIC PRECIPITATION (U)  
IDENTIFIERS: TRANSLATIONS, PHYSICOCHEMICAL  
PROPERTIES (U)

THE TRANSLATION PRESENTS RESULTS OF CHEMICAL  
ANALYSIS AND ELECTRICAL CONDUCTIVITY AND PH  
MEASUREMENTS OF ATMOSPHERIC AEROSOLS AND WATERS  
SAMPLED OVER THE EUROPEAN TERRITORY OF THE  
USSR. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 768 287 21/5 13/2 7/1  
BRAUN (C F) AND CO ALHAMBRA CALIF

TURBOJET AIRCRAFT ENGINE TEST CELL  
POLLUTION ABATEMENT STUDY. (U)

DESCRIPTIVE NOTE: FINAL REPT. JUL-DEC 72,  
JUN 73 93P DAVIES, GEORGE F. ; CROW,  
RICHARD H. ;  
CONTRACT: N62399-72-C-0020  
PROJ: YF38.554  
TASK: YF38.554.001  
MONITOR: NCEL CR-74.001

UNCLASSIFIED REPORT

DESCRIPTORS: (\*TURBOJET ENGINES, \*AIR POLLUTION),  
(\*EXHAUST GASES, TURBOJET ENGINES), PARTICLES, CARBON  
MONOXIDE, NITROGEN OXIDES, HYDROCARBONS, ALDEHYDES,  
INCINERATORS, FLUID FILTERS, ELECTROSTATIC  
PRECIPITATION, SEPARATION, TEST FACILITIES (U)  
IDENTIFIERS: \*AIR POLLUTION CONTROL EQUIPMENT, J-79  
ENGINES, PERFORMANCE EVALUATION, SCRUBBERS, WET  
METHODS, DRY METHODS, CYCLONE SEPARATORS, VENTURI  
SEPARATORS, PACKED TOWER SCRUBBERS (U)

THE REPORT SUMMARIZES THE RESULTS OF A SURVEY AND  
ANALYSIS OF THE APPLICATION OF CONVENTIONAL AIR  
POLLUTANT ABATEMENT SYSTEMS TO THE EXHAUST GAS FROM  
JET ENGINE TEST CELLS. THE FOLLOWING METHODS FOR  
GAS TREATMENT WERE INVESTIGATED: WET SCRUBBERS,  
INCINERATORS, ELECTROSTATIC PRECIPITATORS, FILTERS,  
DRY INERTIAL COLLECTORS. THE LEAST COSTLY METHODS  
FOR MEETING PRESENT EMISSION STANDARDS ARE WATER  
SCRUBBING SYSTEMS. ONE OF THE MOST ATTRACTIVE OF  
WET SCRUBBERS USING KOCH FLEXITRAYS IS DEVELOPED  
IN DETAIL. THE REPORT COVERS THE ASSOCIATED PROBLEM  
OF WATER SUPPLY AND DISPOSAL. THE REPORT ALSO  
INCLUDES RESEARCH AND DEVELOPMENT SUGGESTIONS FOR  
TEST CELL EMISSION CONTROL. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 768 339 22/2  
AEROSPACE CORP EL SEGUNDO CALIF ENGINEERING SCIENCE  
OPERATIONS

PHOTOGRAPHIC MEASUREMENT OF PARTICULATE  
SURFACE CONTAMINATION.

(U)

DESCRIPTIVE NOTE: REPT. FOR OCT 71-OCT 72,  
JUL 73 50P HAMBERG, O. ;  
REPT. NO. TR-0074(4901-01)-2  
CONTRACT: F04701-73-C-0074  
MONITOR: SAMSO TR-73-308

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SPACECRAFT COMPONENTS, DUST), PARTICLE  
SIZE, CONTAMINATION, MEASUREMENT, PHOTOGRAPHY, SURFACE  
PROPERTIES (U)

THE PARTICULATE SURFACE CLEANLINESS OF SPACECRAFT  
IS IMPORTANT TO THE PROPER FUNCTIONING OF CERTAIN  
SPACECRAFT DEVICES. THE REPORT REVIEWS THE  
LIMITATIONS OF SOME SURFACE CONTAMINATION  
MEASUREMENTS CURRENTLY USED, AND SHOWS HOW AN  
APPROACH BASED ON THE USE OF MACROPHOTOGRAPHY HAS  
SOME INHERENT ADVANTAGES OVER THE USUAL METHODS FOR  
FIELD MEASUREMENT OF ASSEMBLED SPACECRAFT. THESE  
ADVANTAGES ARE THAT NO CONTACT WITH SENSITIVE  
SURFACES IS REQUIRED, THE MEASUREMENT IS DIRECT, AND  
A PERMANENT RECORD IS PROVIDED. THE RESULTS OF AN  
EXPERIMENT WHICH COMPARES PARTICLE VISIBILITY AND  
SIZING USING 4X MACROPHOTOGRAPHY WITH 37X  
PHOTOMICROGRAPHY ARE PROVIDED. THESE RESULTS,  
BASED ON THE USE OF AVAILABLE EQUIPMENT, INDICATED  
THAT MACROPHOTOGRAPHY WITH NON-OPTIMIZED EQUIPMENT  
PROVIDED REASONABLE ACCURACY DOWN TO 16 MICRONS AND  
THAT FURTHER REFINEMENT MIGHT ALLOW THE MEASUREMENT  
OF SMALLER PARTICLE SIZES. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 769 291 13/2  
SCOTT RESEARCH LABS INC PLUMSTEADVILLE PA

A STUDY OF STACK EMISSIONS FROM COAST  
GUARD CUTTERS.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
SEP 73 164P SOUZA, ANTHONY F. ;  
CONTRACT: DOT-TSC-429  
MONITOR: USCG, TSC D-13-73, USCG-73-1

UNCLASSIFIED REPORT

DESCRIPTORS: (\*EXHAUST EMISSIONS, \*BOATS),  
(\*COAST GUARD RESEARCH, EXHAUST EMISSIONS),  
(\*AIR POLLUTION, BOATS), POLLUTANTS,  
HYDROCARBONS, DIESEL ENGINES, CARBON MONOXIDE,  
CARBON DIOXIDE, PARTICULATES, SMOKE, NITROGEN  
OXIDES, COMPUTER PROGRAMMING, SAMPLING  
IDENTIFIERS: COAST GUARD CUTTERS

(U)

(U)

THE GASEOUS AND PARTICULATE EMISSIONS FROM 14  
CUTTERS AND BOATS IN THE FIRST COAST GUARD  
DISTRICT HAVE BEEN MEASURED UNDER TYPICAL OPERATING  
CONDITIONS. THESE MEASUREMENTS WERE PERFORMED ON  
57 DIESEL ENGINES AND BOILERS CONFIGURED AS MAIN  
PROPULSION UNITS, SHIP-SERVICE GENERATORS AND HOTEL-  
SERVICE BOILERS. THE DIESEL ENGINES VARIED IN SIZE  
FROM TWO-CYLINDER, NATURALLY ASPIRATED, 35 H.P. UNITS  
TO 3600 H.P. TURBO-CHARGED UNITS. THE GASEOUS  
EMISSION CONCENTRATIONS MEASURED WERE CARBON  
MONOXIDE, CARBON DIOXIDE, TOTAL HYDROCARBONS, AND  
OXIDES OF NITROGEN. PARTICULATE EMISSION RATES BY  
GRAVIMETRIC TECHNIQUE AS WELL AS SMOKE LEVELS WERE  
ALSO DOCUMENTED. THESE MEASURED CONCENTRATIONS  
WERE REDUCED TO MASS EMISSION NOTES BY APPROPRIATE  
COMPUTER PROGRAMS. (AUTHOR)

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 769 482 13/2  
AIR FORCE WEAPONS LAB KIRTLAND AFB N MEX

UNITED STATES AIR FORCE AIRCRAFT  
POLLUTION EMISSIONS.

(U)

DESCRIPTIVE NOTE: FINAL REPT. 1 JAN-13 JUL 73,  
NOV 73 51P NAUGLE, DENNIS F. ; DELANEY,  
BERNARD T. ;  
REPT. NO. AFWL-TR-73-199

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AIRCRAFT ENGINES, \*AIR POLLUTION),  
(\*JET ENGINES, AIR POLLUTION), MILITARY  
AIRCRAFT, AIR FORCE EQUIPMENT, TEST METHODS,  
EXHAUST GASES, NITROGEN OXIDES, CARBON MONOXIDE,  
PARTICULATES, HYDROCARBONS, TABLES(DATA)

(U)

THE INTEREST IN POLLUTION EMISSIONS FROM AIRCRAFT  
HAS BEEN ENHANCED BY ENVIRONMENTAL PROTECTION  
AGENCY'S RECENT DETERMINATION THAT MAJOR CIVILIAN  
AIRPORTS ARE SIGNIFICANT CONTRIBUTORS TO LOCALIZED  
AIR-QUALITY DEGRADATION. THIS REPORT SUMMARIZES  
THE USAF AIRCRAFT AND ENGINES IN COMMON USE,  
PRESENTS NORMALIZED ENGINE POLLUTION EMISSION FACTORS  
(EMISSION INDICES), REVIEWS DEFICIENCIES IN  
PRESENT EMISSION DATA, AND RECOMMENDS FUTURE EFFORTS  
TO BETTER ANALYZE AIRCRAFT EMISSIONS. PRIMARY  
GOALS OF IMPACT ASSESSMENTS AT MANY LOCATIONS AND TO  
STIMULATE COMMENT ON THE DIRECTION OF FUTURE USAF  
EFFORTS CONCERNING THE RECOMMENDED PROJECTS.  
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 770 016 13/2 4/1 4/2  
AIR FORCE CAMBRIDGE RESEARCH LABS L G HANSCOM FIELD  
MASS

ENVIRONMENTAL IMPACT OF B-1 EMISSIONS IN THE  
STRATOSPHERE.

(U)

DESCRIPTIVE NOTE: AIR FORCE SURVEYS IN GEOPHYSICS,  
OCT 73 35P STERGIS, C. G. ;  
REPT. NO. AFCRL-AFSG-275, AFCRL-TR-73-0608  
PROJ: AF-8605  
TASK: 860508

UNCLASSIFIED REPORT

DESCRIPTORS: (\*JET BOMBERS, \*EXHAUST GASES),  
(\*AIR POLLUTION, JET BOMBERS), (\*STRATOSPHERE,  
AIR POLLUTION), NITROGEN OXIDES, HYDROCARBONS,  
OZONE, CHEMICAL REACTIONS, PHOTOCHEMICAL  
REACTIONS, CATALYSIS, ULTRAVIOLET RADIATION,  
PARTICULATES, CARBON MONOXIDE, CARBON DIOXIDE,  
SULFUR OXIDES, ABSORPTION(PHYSICAL), CLIMATE,  
INFRARED RADIATION, WEATHER MODIFICATION  
IDENTIFIERS: B-1 AIRCRAFT

(U)

(U)

THIS IS A COMPENDIUM OF THREE PAPERS AIMED AT THE  
QUESTION 'WHAT WILL BE THE ENVIRONMENTAL IMPACT OF  
A FLEET OF B-1 AIRCRAFT FLYING IN THE  
STRATOSPHERE.' THE THREE PAPERS ARE: (1)  
EFFECTS OF THE B-1 ON OZONE AND ON  
TRANSMITTED UV; (2) VISIBLE AND INFRARED  
EFFECTS OF MOLECULAR AND PARTICULATE B-1  
EMISSIONS; AND (3) ASSESSMENT OF THE IMPACT  
OF THE B-1 EXHAUST EMISSIONS ON LOCAL AND  
GLOBAL CHANGES IN WEATHER. (AUTHOR)

(U)

AD-A044 150

DEFENSE DOCUMENTATION CENTER ALEXANDRIA VA  
ENVIRONMENTAL POLLUTION: AIR POLLUTION - PARTICULATE MATTERS. (U)  
AUG 77

F/G 13/2

UNCLASSIFIED

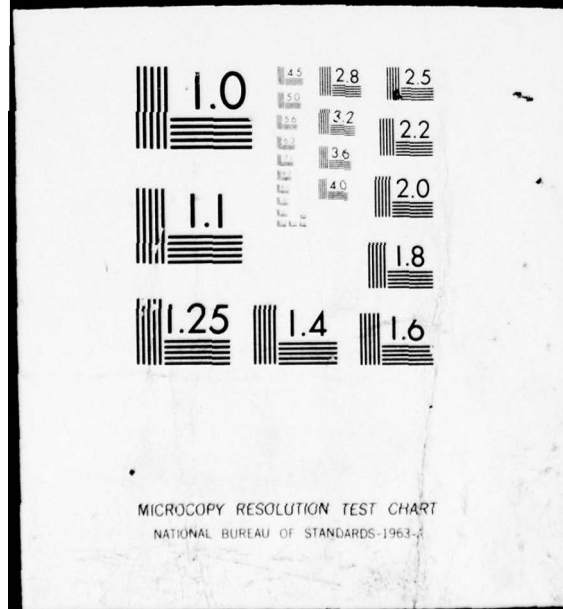
DDC/BIB-77/10

NL

3 OF 4  
AD  
A044150



04415





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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 770 260 21/5 21/2 13/2  
ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AIR FORCE  
STATION TENN

A LITERATURE REVIEW ON TURBINE COMBUSTOR  
MODELLING AND EMISSIONS.

(U)

DESCRIPTIVE NOTE: FINAL REPT. 1 JUL 72-31 MAR 73,  
NOV 73 42P OSGERBY, I. T. ;  
REPT. NO. AEDC-TR-73-163  
PROJ: ARO-RD231

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH ARO,  
INC., TULLAHOMA, TENN. REPT. NO. ARO-ETF-TR-  
73-103.

DESCRIPTORS: \*EMISSIONS, \*TURBOJET ENGINES,  
\*REVIEWS, \*AIR POLLUTION, COMBUSTION, MODELS,  
CARBON MONOXIDE, NITROGEN OXIDES, HYDROCARBONS,  
CHEMICAL REACTIONS

(U)

THE RAPIDLY GROWING BODY OF LITERATURE ON TURBINE  
COMBUSTOR MODELLING IS REVIEWED. THE ANALYTICAL  
MODELS ARE PRESENTED AND DISCUSSED WITH PARTICULAR  
EMPHASIS PLACED ON THEIR ABILITY TO PREDICT GROSS  
OPERATING CHARACTERISTICS AS WELL AS POLLUTANT  
EMISSION LEVELS. COMPARISON IS MADE BETWEEN THEORY  
AND ENGINE AND LABORATORY EXPERIMENTS SHOWING THE  
GENERAL INACCURACIES OF CURRENT MODELS. A  
SUGGESTION FOR IMPROVEMENT OF THE BEST AVAILABLE  
MODEL IS MADE, AND AREAS FOR FUNDAMENTAL RESEARCH ARE  
POINTED OUT. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 770 395 7/4

ARMY CONSTRUCTION ENGINEERING RESEARCH LAB CHAMPAIGN  
ILL

AN EXTENDED EVALUATION OF A PARTICULATE  
PRECIPITATING HEAT TRANSFER SURFACE.

(U)

DESCRIPTIVE NOTE: TECHNICAL MANUSCRIPT,  
NOV 73 285P RIGO, H. G. ;  
REPT. NO. CERL-TM-E-20

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: DOCTORAL THESIS.

DESCRIPTORS: \*PARTICLES, \*SCRUBBERS, AEROSOLS,  
SEPARATION, HEAT TRANSFER, SURFACES, KINETIC  
ENERGY, PHASE STUDIES, REYNOLDS NUMBERS, NAVIER  
STOKES EQUATIONS, DIFFUSION, COMPUTER PROGRAMS,  
GAS FLOW, THESES

(U)

IDENTIFIERS: \*AIR POLLUTION CONTROL

(U)

THE LAMINAR NAVIER-STOKES EQUATIONS WERE SOLVED  
FOR REYNOLDS NUMBERS RANGING BETWEEN ZERO AND  
3000,000 OVER A TYPICAL ELEMENT IN AN ARRAY OF  
LATERALLY DISPOSED CAVITY BEARING, PIECEWISE  
CONTINUOUS, FRONT STEP-BACK STEPS. AN INERTIAL  
PARTICLE TRACKING MODEL WAS COUPLED WITH THE FLOW  
FIELD SOLUTION TO PREDICT COLLECTION EFFICIENCY.  
QUALITATIVE EXPERIMENTAL CONFIRMATION OF THE FLOW  
FIELD WAS OBTAINED FROM FLOW VISUALIZATION  
EXPERIMENTS. EXPERIMENTAL ANALYSIS OF THE  
FRACTIONAL AEROSOL CAPTURE EFFICIENCY OF THE FLOW  
OBSTRUCTION INDICATES THAT FOR SMALL PARTICLES IN  
TURBULENT FLOW, DIFFUSION GOVERNS COLLECTION. THE  
HEAT TRANSFER EFFECTIVENESS OF THE GEOMETRY WAS  
ESTIMATED WITHIN 6% OF THE EXPERIMENTAL VALUES  
USING A NOVEL COUPLING OF THE CHAPMAN-KORST  
CAVITY FLOW MODEL AND THE EQUIVALENT WEDGE SIMILARITY  
SOLUTION. (MODIFIED AUTHOR ABSTRACT)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 770 607 4/2  
RAND CORP SANTA MONICA CALIF

THE BLACK CLOUD EXPERIMENT, (U)

JUL 73 31P KAHLE, ANNE B. ; DEIRMENDJIAN,  
D. ;  
REPT. NO. R-1263-ARPA  
CONTRACT: DAHC15-73-C-0181

UNCLASSIFIED REPORT

DESCRIPTORS: \*CLIMATE, AIR POLLUTION, SOLAR  
RADIATION, ATMOSPHERIC TEMPERATURE, WIND, (U)  
MOISTURE, COMPUTERIZED SIMULATION (U)  
IDENTIFIERS: \*CLIMATIC CHANGES (U)

THE RAND VERSION OF THE MINTZ-ARAKAWA TWO-  
LEVEL GENERAL CIRCULATION MODEL OF THE ATMOSPHERE WAS  
USED TO STUDY EFFECTS OF A 6.5% REDUCTION IN  
INCOMING SOLAR RADIATION. SIXTY DAYS WERE  
SIMULATED. THE TEMPERATURES OF BOTH THE ATMOSPHERE  
AND THE GROUND BEGAN DROPPING IMMEDIATELY, RELATIVE  
TO A CONTROL EXPERIMENT, AND DROPPED FAIRLY STEADILY,  
REACHING AN AVERAGE DECREASE OF ABOUT A DEGREE  
CENTIGRADE AT THE END OF SIXTY DAYS. (MODIFIED  
AUTHOR ABSTRACT) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 770 957 4/2

AIR FORCE CAMBRIDGE RESEARCH LABS L G HANSCOM FIELD  
MASS

BALLOONBORNE AEROSOL PARTICLE CONCENTRATION  
AND SIZE DISTRIBUTION MEASUREMENTS.

(U)

DESCRIPTIVE NOTE: SCIENTIFIC INTERIM REPT.,

OCT 73 16P FENN, R. ; DULCHINOS, J. ;

MIRANDA, H. ;

REPT. NO. AFCRL-TR-73-0639

PROJ: AF-7621

TASK: 762103

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PRESENTED AT THE AFCRL SCIENTIFIC  
BALLOON SYMPOSIUM, WENTWORTH-BY-THE-SEA,  
PORTSMOUTH, NEW HAMPSHIRE, 25 SEP 72.

DESCRIPTORS: \*METEOROLOGICAL INSTRUMENTS, \*AEROSOLS,  
MEASUREMENT, METEOROLOGICAL BALLOONS, PARTICLE  
SIZE, NEW MEXICO

(U)

IDENTIFIERS: WHITE SANDS MISSILE RANGE

(U)

AN INSTRUMENT WAS DEVELOPED TO MEASURE THE  
CONCENTRATION AND SIZE DISTRIBUTION OF PARTICULATES  
IN THE ATMOSPHERE. SINCE THE CONCENTRATION OF  
NATURAL AEROSOLS IN THE FREE ATMOSPHERE ABOVE THE  
SURFACE LAYER IS LESS THAN ONE PARTICLE PER CC,  
EXTREME PRECAUTIONS HAVE TO BE TAKEN TO AVOID  
CONTAMINATION FROM THE INSTRUMENTATION PACKAGE,  
INCLUDING THE BALLOON ITSELF. VARIOUS ASPECTS OF  
BALLOONBORNE AEROSOL MEASUREMENTS ARE DISCUSSED IN  
THEIR RELATIONSHIP TO THE BALLOON AS THE VEHICLE AND  
MEASUREMENT PLATFORM. (MODIFIED AUTHOR  
ABSTRACT)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 771 895 20/9 4/1  
MASSACHUSETTS INST OF TECH LEXINGTON LINCOLN LAB

THE EFFECT OF DUST ON 10.6 MICROMETERS LASER-  
INDUCED AIR BREAKDOWN.

(U)

DESCRIPTIVE NOTE: JOURNAL ARTICLE,  
APR 73 5P LENCIONI, DONALD E. ;  
REPT. NO. JA-4188  
CONTRACT: F19628-73-C-0002, ARPA ORDER-600  
MONITOR: ESD TR-73-225

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN APPLIED PHYSICS LETTERS,  
V23 N1 P12-14, 1 JUL 73.

DESCRIPTORS: \*GAS IONIZATION, \*AIR, \*DUST,  
ELECTRIC DISCHARGES, CARBON DIOXIDE LASER, LASER  
BEAMS, AEROSOLS  
IDENTIFIERS: DIELECTRIC BREAKDOWN

(U)

(U)

LASER-INDUCED BREAKDOWN IN VERY CLEAR AIR AT 10.6  
MICROMETERS IS SHOWN TO HAVE A THRESHOLD OF  $3 \times 10$  TO  
THE 9TH POWER W/CMSQUARED FOR LARGE BEAMS AND IS  
DESCRIBED WELL BY MICROWAVE BREAKDOWN THEORY. DUST  
PARTICLES ARE SHOWN TO LOWER THE THRESHOLD BY AN  
AMOUNT WHICH IS GREATER FOR LARGER PARTICLES AND  
HIGHER VAPOR TEMPERATURES. THERE IS A MINIMUM IN  
THRESHOLD FOR LARGE PARTICLES, WHICH FOR 200-NSEC  
PULSE LENGTH IS  $< \text{OR} = 10$  TO THE 8TH POWER/CM  
SQUARED CORRESPONDING TO AN ENERGY FLUENCE OF 10-20  
J/CM SQUARED. THESE RESULTS ARE EXPLAINED  
QUALITATIVELY BY THE INCREASE IN INVERSE  
BREMSSTRAHLUNG RATE CAUSED BY EXPLODING PARTICLES.  
(AUTHOR)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 773 642 4/2 13/2 7/5  
CALSPAN CORP BUFFALO N Y

A PRELIMINARY INVESTIGATION OF THE INTERACTION  
BETWEEN PHOTOCHEMICAL AEROSOLS AND FOG. (U)

DESCRIPTIVE NOTE: FINAL REPT. APR-AUG 73,  
JAN 74 47P KATZ, ULRICH ; KOCMOND, WARREN  
C. ;  
REPT. NO. CALSPAN-VC-3080-M-2  
CONTRACT: N00014-71-C-0291

UNCLASSIFIED REPORT

DESCRIPTORS: \*SMOG, \*CONDENSATION NUCLEI, \*FOG,  
DROPS, PHOTOCHEMICAL REACTIONS, HUMIDITY, SULFUR  
OXIDES, NITROGEN OXIDES, DIOXIDES, PROPENES,  
SIZE(DIMENSIONS), AEROSOLS, AIR POLLUTION,  
OXIDATION (U)  
IDENTIFIERS: SULFUR DIOXIDE, NITROGEN DIOXIDE,  
PARTICLE SIZE DISTRIBUTION (U)

PRELIMINARY EXPERIMENTS WERE PERFORMED IN AN  
ENVIRONMENTAL SMOG CHAMBER TO STUDY THE INFLUENCE OF  
RELATIVE HUMIDITY AND THE PRESENCE OF CERTAIN  
AEROSOLS ON THE FORMATION OF PHOTOCHEMICAL AEROSOLS  
AND CLOUD CONDENSATION NUCLEI. THE SPECIFIC GASEOUS  
REACTANTS CHOSEN FOR THIS STUDY WERE SO<sub>2</sub> AND THE  
COMBINATION OF PROPYLENE AND NO<sub>2</sub>. THE  
PHOTOOXIDATION OF SOME KEY POLLUTANTS AND THE  
ACCOMPANYING AEROSOL FORMATION WAS OBSERVED UNDER  
DIFFERENT HUMIDITY REGIMES. THE SUBSEQUENT  
INTERACTION OF THE MOISTURE WITH THE PHOTOCHEMICAL  
AEROSOL UNDER FOG FORMING CONDITIONS WAS  
INVESTIGATED. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 775 094 21/5 21/2 13/2  
CALIFORNIA UNIV BERKELEY DEPT OF MECHANICAL  
ENGINEERING

FACTORS CONTROLLING POLLUTANT EMISSIONS FROM  
GAS TURBINE ENGINES, (U)

74 15P SAWYER, ROBERT F. ; CERNANSKY,  
NICHOLAS P. ; OPPENHEIM, ANTONI K. ;  
CONTRACT: AF-AFOSR-2299-72, AF-AFOSR-2200-72  
PROJ: AF-9750  
TASK: 975002  
MONITOR: AFOSR TR-74-0192

UNCLASSIFIED REPORT

DESCRIPTORS: \*GAS TURBINES, \*AIR POLLUTION, SMOKE,  
ALDEHYDES, HYDROCARBONS, COMBUSTION, EXHAUST  
GASES, AIRCRAFT ENGINES, CARBON MONOXIDE,  
PARTICULATES, NITROGEN OXIDES, OPERATION (U)

PRIMARY POLLUTANTS EMITTED BY AIRCRAFT GAS TURBINE  
ENGINES ARE CARBON MONOXIDE, HYDROCARBONS, ALDEHYDES,  
SMOKE, PARTICULATES, AND NITRIC OXIDE. FACTORS  
CONTROLLING EMISSIONS OF THESE POLLUTANTS ARE  
ANALYZED ON THE BASIS OF AIRCRAFT ENGINE EXHAUST  
COMPOSITION AND LABORATORY STUDIES OF GAS TURBINE  
COMBUSTION PROCESSES. MOREOVER, AN ANALYTICAL  
PREDICTION OF THE EFFECT OF AIRCRAFT OPERATING  
PARAMETERS ON THE EMISSION OF NITRIC OXIDE IS ALSO  
GIVEN. OPERATIONAL CONDITIONS AND ENGINE  
PARAMETERS SUCH AS AMBIENT TEMPERATURE, PRESSURE, AND  
HUMIDITY, FLIGHT ALTITUDE, FLIGHT MACH NUMBER,  
WATER INJECTION, FUEL PROPERTIES, AND COMBUSTOR  
CHARACTERISTICS HAVE BEEN STUDIED ANALYTICALLY,  
YIELDING RATIONAL CRITERIA FOR THE PREDICTION OF  
THEIR EFFECT ON THE EMISSION OF NITRIC OXIDE.  
(MODIFIED AUTHOR ABSTRACT) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 776 160 14/2 7/4  
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER CHARLOTTESVILLE  
VA

COMPARISON OF TWO PHOTOELECTRIC DEVICES FOR  
DETERMINING SIZES AND CONCENTRATIONS OF  
AEROSOL PARTICLES,

(U)

NOV 73 10P LAKTIONOV, A. G. ;  
REPT. NO. FSTC-HT-23-1732-72

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF INSTITUT PRIKLADNOI  
GEOFIZIKI, LENINGRAD. TRUDY (USSR) N7 P67-73 1967.

DESCRIPTORS: \*PARTICLE SIZE, \*AEROSOLS, \*LIGHT  
SCATTERING, \*PHOTODETECTORS, SIGNAL TO NOISE RATIO,  
CALIBRATION, RESPONSE, TRANSLATIONS, USSR (U)

DEVICE ONE COLLECTS LIGHT SCATTERED BY PARTICLES AT  
RIGHT ANGLES TO DIRECTION OF THEIR ILLUMINATION;  
DEVICE TWO COLLECTS LIGHT SCATTERED BY PARTICLES IN  
DIRECTION NEAR THAT OF PARTICLE ILLUMINATION.  
AFTER OIL DROPLET CALIBRATION OF BOTH DEVICES, IT  
WAS FOUND THAT IN THE  $R > 0.6$  MICROMETER REGION OF  
DROP RADII, AMPLITUDES OF OUTGOING IMPULSES FROM BOTH  
DEVICES ARE PROPORTIONAL TO SQUARES OF SIZES OF  
PARTICLES. IN THE RANGE FROM 20 TO 0.6 MICROMETER  
THE SIGNAL-TO-NOISE RATIO IS 14 TIMES GREATER IN  
DEVICE TWO THAN DEVICE ONE. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 778 769 21/5 13/2 21/2  
AVCO LYCOMING DIV STRATFORD CONN

T53 AND T55 GAS TURBINE COMBUSTOR AND  
ENGINE EXHAUST EMISSION MEASUREMENTS.

(U)

DESCRIPTIVE NOTE: FINAL REPT. JUN 72-FEB 73,  
DEC 73 222P RUBINS, PHILIP M. ; DOYLE,  
BRIAN W. ;

REPT. NO. LYC-73-8  
CONTRACT: DAAJ02-72-C-0102  
PROJ: DA-1-G-162207-AA-71  
TASK: 1-G-162207-AA-7102  
MONITOR: USAAMRDL TR-73-47

UNCLASSIFIED REPORT

DESCRIPTORS: \*GAS TURBINES, \*EXHAUST GASES, SMOKE,  
HYDROCARBONS, COMBUSTION CHAMBERS, CARBON  
MONOXIDE, NITROGEN OXIDES, CARBON DIOXIDE,  
PROFILES, AIR POLLUTION, GAS ANALYSIS, POWER,  
LABORATORY TESTS, PERFORMANCE (ENGINEERING)  
IDENTIFIERS: T-53 ENGINES, T-55 ENGINES, T-53-  
L-13-A ENGINES, T-55-L-11A ENGINES, AIR  
FUEL RATIO, COMBUSTION EFFICIENCY

(U)

(U)

THE PURPOSE OF THE PRESENT TESTS WAS TO EVALUATE  
GAS TURBINE ENGINES AND COMBUSTORS FROM A POLLUTANT  
STANDPOINT AND COMPARE THE RESULTS WITH THE CURRENT  
STATE OF THE ART. EXTENSIVE TESTS WERE MADE TO  
DETERMINE THE GASEOUS EXHAUST EMISSION  
CHARACTERISTICS OF BOTH A T53-L-13A AND A  
T55-L-11A LYCOMING GAS TURBINE ENGINE. IN  
ADDITION, THE COMBUSTOR FOR EACH ENGINE WAS TESTED  
SEPARATELY UNDER LABORATORY CONDITIONS SIMULATING  
ENGINE OPERATION, WITH SIMILAR MEASUREMENTS OF  
GASEOUS EMISSIONS. DATA WERE ANALYZED FOR THE FULL  
RANGE OF ENGINE POWER OPERATION FOR CO,  
HYDROCARBONS, NO, NOX, AND CO2, AND FOR SMOKE.  
SAMPLES WERE TAKEN WITH SIX-POINT TRAVERSING  
PROBES, WITH A SINGLE-POINT TRAVERSING PROBE, AND  
WITH MULTIORIFICE AVERAGING-TYPE PROBES. EXTENSIVE  
PROFILE DATA PLOTTED ALONG DIAMETERS OF THE ENGINE  
EXHAUST, AROUND THE CIRCUMFERENCE OF THE COMBUSTOR  
EXIT PLANE, AND AS ISOPLETH MAPS ARE PRESENTED.

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 779 120 6/10 13/2  
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

STUDY OF COMBINED RESORPTIVE EFFECT OF  
ATMOSPHERIC POLLUTANTS (GASES AND DUST),

(U)

APR 74 15P ELFIMOVA, E. V. ; GUSEV, M.  
I. ; NOVIKOV, YU. V. ; YUDINA, T. V. ; SERGEEV,  
A. N. ;  
REPT. NO. FTD-HT-23-523-74

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF GIGIENA I  
SANITARIYA (USSR) N8 P11-16 1972, BY PAUL J.  
REIFF.

DESCRIPTORS: \*INDUSTRIAL HYGIENE, GASES, AIR  
POLLUTION, SULFUR OXIDES, CARBON MONOXIDE,  
PHENOLS, DUST, USSR, TRANSLATIONS, PHYSIOLOGY,  
MICE, LABORATORY ANIMALS, EXPERIMENTAL DATA,  
INHALATION, STEEL INDUSTRY, HEMATOLOGY  
IDENTIFIERS: \*AIR POLLUTION EFFECTS (ANIMALS),  
\*AIR POLLUTION DETECTION, SYNERGISTIC EFFECTS OF  
AIR POLLUTANTS

(U)

(U)

EXPERIMENTAL INVESTIGATIONS FOR A 96 DAY PERIOD  
INTO THE EFFECT OF A MIXTURE OF GASES WITH AN AEROSOL  
IN SO<sub>2</sub> CONCENTRATIONS OF 0.05 MG/CU M, CO 1 MG/CU  
M, PHENOL 0.01 MG/CU M AND DUST 0.15 MG/CU M SHOWED  
SIGNIFICANT CHANGES IN ALL TESTS USED FOR THE  
ANIMALS. THE TOTAL OF THE COMBINATIONS OF  
FRACTIONAL CONCENTRATIONS OF SUBSTANCES FROM THEIR  
THRESHOLD (CONCENTRATIONS) AT A LEVEL OF 0.76  
PROVED TO BE INOPERATIVE. THE COMBINED RESORPTIVE  
EFFECT OF SMALL CONCENTRATIONS OF SULFUR DIOXIDE,  
CARBON MONOXIDE, PHENOL, AND DUST IS CHARACTERISTIC  
OF THE EFFECT OF SUMMATION. TO EVALUATE THE DEGREE  
TO WHICH ATMOSPHERIC AIR IS POLLUTED WITH AROUND THE  
CLOCK SAMPLING IT CAN BE RECOMMENDED THAT THE LEVEL  
AT WHICH THE SUM OF THE FRACTIONS OF CONCENTRATIONS  
FROM THEIR MAXIMUM PERMISSIBLE AMOUNTS NOT EXCEED  
0.76.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 779 156 13/2  
OFFICE OF NAVAL RESEARCH LONDON (ENGLAND)

SURVEY OF METHODS OF OBSERVATION AND  
MEASUREMENT OF ATMOSPHERIC POLLUTION. (U)

DESCRIPTIVE NOTE: CONFERENCE REPT.,  
DEC 73 35P MASON, DAVID M. ;  
REPT. NO. ONRL-C-27-73

UNCLASSIFIED REPORT

DESCRIPTORS: \*MEETINGS, GAS ANALYSIS, AEROSOLS,  
AIR POLLUTION, FINLAND (U)

IDENTIFIERS: \*AIR POLLUTION DETECTION, ATMOSPHERIC  
COMPOSITION (U)

THE REPORT BRIEFLY SUMMARIZES HIGHLIGHTS OF A  
TECHNICAL CONFERENCE ON THE OBSERVATION AND  
MEASUREMENT OF ATMOSPHERIC POLLUTION HELD IN  
HELSINKI IN THE SUMMER OF 1973. AN APPENDIX  
INCLUDES A CONDENSED PROGRAM WITH TOPICS, SPEAKERS,  
AND AFFILIATIONS. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 780 049 13/2 1/5 1/2  
ARGONNE NATIONAL LAB ILL ENERGY AND ENVIRONMENTAL SYSTEMS  
DIV

AIRPORT VICINITY AIR POLLUTION STUDY. (U)

DESCRIPTIVE NOTE: FINAL REPT.,  
DEC 73 295P ROTE, D. M. ; HECHT, R. W.  
; WANG, I. T. ; CIRILLO, R. R. ; WANGEN, L. E.  
;  
CONTRACT: DOT-FA71WAI-223  
MONITOR: FAA-RD 73-113

UNCLASSIFIED REPORT

DESCRIPTORS: \*AIRPORTS, \*AIR QUALITY, \*AIR  
POLLUTION, FLOW CHARTING, COMPUTERIZED SIMULATION,  
AIRCRAFT, DISPERSING, DATA ACQUISITION,  
ATMOSPHERIC MOTION, HYDROCARBONS, NITROGEN OXIDES,  
PARTICULATES, CARBON MONOXIDE, COMMERCIAL  
AVIATION, CIVIL AVIATION, OPERATION, ILLINOIS,  
CALIFORNIA (U)

IDENTIFIERS: ATMOSPHERIC DIFFUSION, AIRCRAFT  
EXHAUST, AIR QUALITY DATA, AIR QUALITY MONITORING,  
CHICAGO(ILLINOIS), LOS  
ANGELES(CALIFORNIA) (U)

THE REPORT DESCRIBES THE DEVELOPMENT OF A COMPUTER  
MODEL THAT CAN BE USED TO DETERMINE THE IMPACT OF AN  
EXISTING OR PLANNED AIRPORT ON THE AIR QUALITY IN ITS  
VICINITY. THE MODEL DEVELOPMENT WAS SUPPORTED BY  
AN AIR QUALITY MONITORING AND EMISSION ACTIVITY DATA  
ACQUISITION PROGRAM. O'HARE INTERNATIONAL  
AIRPORT, CHICAGO, ILLINOIS, AND ORANGE  
COUNTY AIRPORT, LOS ANGELES, CALIFORNIA WAS  
SELECTED AS TEST SITES, EACH BEING REPRESENTATIVE OF  
A PREDOMINANTLY COMMERCIAL AIRPORT AND A  
PREDOMINANTLY GENERAL AVIATION REPORT, RESPECTIVELY.  
THE ACTIVITY SIMULATION AND AIR QUALITY MODEL ARE  
DISCUSSED. RESULTS OF THE COMPUTATIONS OF AIR  
QUALITY CONCENTRATIONS AND COMPARISONS WITH  
OBSERVATIONS ARE PRESENTED. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 780 679 4/2  
RAND CORP SANTA MONICA CALIF

THE ATMOSPHERIC RESPONSE TO A STRATOSPHERIC  
DUST CLOUD AS SIMULATED BY A GENERAL  
CIRCULATION MODEL, (U)

MAR 74 23P BATTEN, E. S. ;  
REPT. NO. R-1324-ARPA  
CONTRACT: DAHC15-73-C-0181, ARPA ORDER-189-1

UNCLASSIFIED REPORT

DESCRIPTORS: \*ATMOSPHERIC CIRCULATION, \*DUST,  
\*STRATOSPHERE, COMPUTERIZED SIMULATION, CLIMATE,  
SOLAR RADIATION, ATTENUATION, ATMOSPHERIC  
PRECIPITATION (U)  
IDENTIFIERS: \*CLIMATIC CHANGES, GREENHOUSE  
EFFECT (U)

RESULTS OF USING THE RAND VERSION OF THE MINTZ-  
ARAKAWA GENERAL CIRCULATION MODEL TO INVESTIGATE  
THE INITIAL ATMOSPHERIC RESPONSE TO A STRATOSPHERIC  
DUST CLOUD SPREAD UNIFORMLY IN A ZONE BETWEEN TWENTY-  
FIVE DEGREES NORTH AND SEVENTY-FIVE DEGREES NORTH.  
THE DUST PARTICLES, CONSTRUED TO BE TWO MICRONS OR  
LESS IN DIAMETER, HAVE A TOTAL VOLUME COMPARABLE TO  
THE EJECTA OF KRAKATOA IN 1883. THE MODEL WAS  
INTEGRATED FOR A SIMULATED PERIOD CORRESPONDING TO  
JANUARY AND FEBRUARY, THE RESULTS BEING COMPARED  
WITH THOSE OF A CONTROL RUN STARTING WITH THE SAME  
INITIAL CONDITIONS AND SIMULATING THE SAME PERIOD.  
THE TEMPERATURE BELOW THE DUST CLOUD COOLED TWO TO  
THREE DEGREES AND THE LAND/OCEAN TEMPERATURE  
CONTRASTS INCREASED. PRECIPITATION VARIED AS A  
RESULT OF CHANGES IN THE CIRCULATION AND MOISTURE  
FLUX. MIDLATITUDE FERREL CIRCULATIONS WERE  
WEAKENED; BAROCLINICITY DECREASED AT HIGH LATITUDES  
AND INCREASED AT LOW. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 781 842 4/1 20/6  
MAINZ UNIV (WEST GERMANY) INSTITUT FUER METEOROLOGIE

RESEARCH ON ATMOSPHERIC OPTICAL RADIATION  
TRANSMISSION.

(U)

DESCRIPTIVE NOTE: FINAL REPT. 1 JAN 73-31 DEC 73,  
APR 74 23P BULLRICH,K. ; FISCHER,K. ;

HANEL,G. ;

CONTRACT: AF-AFOSR-2545-73

PROJ: AF-7621

TASK: 762103

MONITOR: AFCRL

TR-74-0273

UNCLASSIFIED REPORT

DESCRIPTORS: \*LIGHT TRANSMISSION, AEROSOLS,  
INFRARED RADIATION, REFRACTIVE INDEX, CLOUDS,  
FOG, AIR POLLUTION, WEST GERMANY

(U)

IDENTIFIERS: \*ATMOSPHERIC ATTENUATION

(U)

MEASUREMENTS OF THE MASS ABSORPTION INDEX OF  
DIFFERENT TYPES OF ATMOSPHERIC AEROSOL PARTICLES  
COMBINED WITH CORRESPONDING DATA ON THE DENSITY GIVE  
AN INSIGHT IN THE ABSORPTION COEFFICIENT OF THE  
PRESENT PARTICLES. THE ABSORPTION IN THE SHORT  
WAVELENGTH RANGE PRODUCES HEATING, IN THE INFRARED  
COOLING OF THE AIR. THE ABSORPTION DEPENDS UPON  
THE RELATIVE HUMIDITY AND UPON THE CLIMATIC  
CONDITIONS. THE RESULTS GIVE AN ADDITIONAL  
INFORMATION UPON THE TRANSPARENCY OF THE ATMOSPHERE  
IN DIFFERENT WAVELENGTH REGIONS AND SUGGEST TO BE A  
HELP FOR CLIMATE MODELLING. A CONNECTION BETWEEN  
THE CHEMICAL COMPOSITION AND STRUCTURE OF AEROSOL  
PARTICLES AND THEIR WATER UPTAKE AT LARGE RELATIVE  
HUMIDITY ALLOWS THE TREATMENT OF PROBLEMS CONCERNING  
CLOUD PHYSICS AS WELL AS ELECTROMAGNETIC WAVE  
PROPAGATION IN CLOUDS AND FOG. (AUTHOR)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 782 108 14/2 7/4 6/8  
ARMY LAND WARFARE LAB ABERDEEN PROVING GROUND MD

REAL TIME FIELD MEASUREMENT OF  
AEROSOLS.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
MAY 74 43P DAVENPORT, C. D. ;  
REPT. NO. LWL-CR-04B73  
PROJ: LWL-04-B-73

UNCLASSIFIED REPORT

DESCRIPTORS: \*AEROSOLS, \*PARTICLE SIZE,  
\*PHOTOMICROGRAPHY, MEASUREMENT, FIELD TESTS,  
DISPERSING, INSECTICIDES  
IDENTIFIERS: PERFORMANCE EVALUATION

(U)

(U)

THE LWL PROTOTYPE RAPID AEROSOL  
EVALUATION SYSTEM (RAES) WAS EXAMINED TO  
DETERMINE THE FEASIBILITY AND ACCURACY OF THE SYSTEM  
IN PROVIDING DROPLET SIZE INFORMATION IN ESSENTIALLY  
REAL TIME WHEN USED WITH INSECTICIDE DISPERSAL  
EQUIPMENT IN THE FIELD. THE SYSTEM WAS TESTED IN  
CONJUNCTION WITH A SIMULATED FIELD MISSION USING  
MINERAL OIL INSTEAD OF INSECTICIDE. DROPLET SIZE  
DETERMINATIONS WERE MADE USING THE RAES SYSTEM AND  
COMPARED TO MEASUREMENTS MADE USING A STANDARD  
LABORATORY PROCEDURE WHICH INVOLVED DETERMINATION OF  
THE MASS MEDIAN DIAMETER, NUMERICAL MEDIAN DIAMETER,  
RANGE AND DISTRIBUTION OF DROPLET SIZES IN AN  
AEROSOL. RESULTS OF THIS COMPARISON AND  
RECOMMENDATIONS ARE REPORTED. THE SUITABILITY OF  
THE TECHNIQUE AND THE RAES PHOTOMICROGRAPHIC  
EQUIPMENT IS SATISFACTORY AS A FIELD METHOD FOR  
EVALUATING THE AEROSOL PRODUCING EFFICIENCY OF AN  
INSECTICIDE SPRAYER. (MODIFIED AUTHOR  
ABSTRACT)

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 783 510 4/2 13/2  
RAND CORP SANTA MONICA CALIF

A NUMERICAL EXPERIMENT ON THE EFFECTS OF  
REGIONAL ATMOSPHERIC POLLUTION ON GLOBAL  
CLIMATE,

(U)

JUN 74 92P KOENIG, L. RANDALL ;  
REPT. NO. R-1429-ARPA  
CONTRACT: DAHC15-73-C-0181, ARPA ORDER-189-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: \*CLIMATE, \*AIR POLLUTION, \*AEROSOLS,  
\*ATMOSPHERE MODELS, CIRCULATION, GLOBAL,  
MATHEMATICAL MODELS, ATMOSPHERIC TEMPERATURE,  
WIND, SOLAR RADIATION, CONDENSATION NUCLEI,  
RAINFALL, CLOUD COVER, CONVERGENCE, CORRELATION  
TECHNIQUES, NORTH AMERICA, SOUTH AMERICA  
IDENTIFIERS: GREENHOUSE EFFECT

(U)

(U)

THE REPORT DESCRIBES THE USE A GLOBAL ATMOSPHERIC  
GENERAL CIRCULATION MODEL TO INVESTIGATE THE CHANGE  
IN CLIMATE CAUSED BY THE INTRODUCTION OF HIGH  
CONCENTRATIONS OF HYGROSCOPIC AEROSOLS INTO A LIMITED  
REGION--ROUGHLY, NORTH AMERICA. IT WAS  
POSTULATED THAT THE AEROSOLS WOULD SERVE AS  
CONDENSATION NUCLEI AT LOWER RELATIVE HUMIDITY THAN  
NATURAL AEROSOLS. THE EXPERIMENT WAS RUN  
SIMULATING 60 DAYS. VALUES OF METEOROLOGICAL  
PROPERTIES DURING THIS PERIOD WERE COMPARED WITH  
THOSE OBTAINED BY A CONTROL SIMULATION IN WHICH THE  
POLLUTED REGION WAS ABSENT.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 784 572 4/2 13/2  
CRAMER (H E) CO INC SALT LAKE CITY UTAH

METEOROLOGICAL STUDY FOR TOOELE ARMY DEPOT.  
VOLUME I.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,

AUG 74 95P CARLSON, PAUL E. ; SCUDERI,  
JOHN A. ;

CONTRACT: DAAD09-74-C-0006

PROJ: USATECOM-5-CO-523-ECP-004

MONITOR: DPG FR-C965A-VOL-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 2, AD-784  
573.

DESCRIPTORS: \*METEOROLOGICAL DATA, \*AIR POLLUTION,  
\*MILITARY FACILITIES, WIND VELOCITY, DIFFUSION,  
WASTE DISPOSAL, AIR QUALITY, TRACER STUDIES,  
DEMILITARIZATION, ARMY OPERATIONS, MATHEMATICAL  
MODELS, UTAH

(U)

IDENTIFIERS: TOOELE ARMY DEPOT, HAZARDOUS  
MATERIALS

(U)

A METEOROLOGICAL STUDY CONCERNED WITH THE ASSURANCE  
OF AIR QUALITY DURING PLANNED DEMILITARIZATION  
OPERATIONS AT TOOELE ARMY DEPOT, SOUTH AREA  
(TEAD-S), WAS CONDUCTED BY DUGWAY PROVING  
GROUND UNDER THE SPONSORSHIP OF THE PROGRAM  
MANAGER FOR THE DEMILITARIZATION OF CHEMICAL  
MATERIEL. THE PURPOSE OF THIS STUDY WAS TO  
INVESTIGATE THE DIFFUSION ASPECTS OF AIR CONTAMINANT  
EMISSIONS FROM DEMILITARIZATION OPERATIONS AT THE  
PROPOSED LOCATION AS THEY ARE RELATED TO BOTH STATE  
AND FEDERAL AIR QUALITY STANDARDS AND TO ADDITIONAL  
STANDARDS AS IMPOSED BY THE ARMY FOR THIS  
OPERATION. CONTINUOUS 1-HOUR PLANT STACK EMISSIONS  
WERE SIMULATED USING A FLUORESCENT PARTICLE TRACER.  
SIMULATED EMISSIONS WERE MADE OVER A WIDE VARIETY  
OF ATMOSPHERIC CONDITIONS. THE BEHAVIOR OF THIS  
MATERIAL HAS BEEN STUDIED AND ANALYZED. (MODIFIED  
AUTHOR ABSTRACT)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 784 573 4/2 13/2  
CRAMER (H E) CO INC SALT LAKE CITY UTAH

METEOROLOGICAL STUDY FOR TOOELE ARMY DEPOT.  
VOLUME II.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
AUG 74 424P CARLSON, PAUL E. ; SCUDERI,  
JOHN A. ;  
CONTRACT: DAAD09-74-C-0006  
PROJ: USATECOM-5-CO-523-ECP-004  
MONITOR: DPG FR-C965A-VOL-2

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 1, AD-784  
572.

DESCRIPTORS: \*METEOROLOGICAL DATA, \*AIR POLLUTION,  
\*MILITARY FACILITIES, WIND VELOCITY,  
DEMILITARIZATION, AIR QUALITY, TRACER STUDIES,  
ATMOSPHERIC TEMPERATURE, TABLES(DATA), UTAH  
IDENTIFIERS: TOOELE ARMY DEPOT

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(U)

;CONTENTS: METEOROLOGICAL DATA; OBSERVED FP  
DOSAGES; USER INSTRUCTIONS FOR THE TEAD-S  
PREDICTION SYSTEM; SURFACE OBSERVATION DATA;  
WINDS ALOFT DATA; RAWINSONDE DATA.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 785 955 13/2

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF  
SYSTEMS AND LOGISTICS

AN ANALYSIS OF THE AIR QUALITY MONITORING  
PROGRAM IN THE WRIGHT-PATTERSON AIR FORCE  
BASE VICINITY.

(U)

DESCRIPTIVE NOTE: MASTER'S THESIS,  
AUG 74 129P HARKCOM, GARY V. ;  
REPT. NO. SLSR-20-74B

UNCLASSIFIED REPORT

DESCRIPTORS: \*AIR POLLUTION, \*MONITORING, \*AIR  
FORCE FACILITIES, THESES, STANDARDS, ATMOSPHERIC  
MOTION, OHIO, PARTICULATES, SULFUR OXIDES,  
NITROGEN OXIDES, CARBON MONOXIDE, HYDROCARBONS

(U)

IDENTIFIERS: AIR POLLUTION, WRIGHT-PATTERSON  
AIR FORCE BASE, DAYTON(OHIO), AIR  
QUALITY DATA

(U)

THE PURPOSE OF THIS STUDY WAS TO PROVIDE AN  
EVALUATIVE TEST OF THE AIR QUALITY MONITORING NETWORK  
PERTINENT TO THE VICINITY OF WRIGHT-PATTERSON  
AFB (WPAFB), OHIO. A REVIEW OF AIR POLLUTION  
DISPERSION LITERATURE WAS USED AS A BASIS FOR  
FORMULATING THE TEST STANDARDS. AN EVALUATIVE  
ANALYSIS WAS PERFORMED FOR EACH OF THE FIVE PRIMARY  
AIR POLLUTANTS (PARTICULATES, SULFUR DIOXIDE,  
NITROGEN OXIDES, CARBON MONOXIDE, AND HYDROCARBONS)  
AND FOR ONE SECONDARY POLLUTANT (PHOTOCHEMICAL  
OXIDANTS) UNDER TYPICAL METEOROLOGICAL CONDITIONS.  
AN ADDITIONAL TEST WAS ALSO PERFORMED FOR EACH  
POLLUTANT ON THE CITY OF DAYTON, OHIO, DURING  
SIMULATED INVERSION AIR CONDITIONS. THE ANALYSES  
ATTEMPTED TO IDENTIFY MAJOR DISCREPANCIES BETWEEN THE  
AIR MONITORING NETWORK AND THE CRITICAL AIR SAMPLING  
AREAS IDENTIFIED BY THIS STUDY. THE STUDY HAS  
CONCLUDED THAT THE AIR MONITORING NETWORK FOR THE  
WPAFB VICINITY IS GENERALLY ADEQUATE, WITH THE  
MAJOR EXCEPTION BEING THE CITY OF DAYTON.  
(MODIFIED AUTHOR ABSTRACT)

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 786 454 4/1 13/2  
AIR FORCE CAMBRIDGE RESEARCH LABS L G HANSCOM FIELD  
MASS

AIR POLLUTION AND WARM FOG  
MODIFICATION.

(U)

DESCRIPTIVE NOTE: ENVIRONMENTAL RESEARCH PAPERS,  
JUN 74 17P WEINSTEIN, ALAN I. ;  
REPT. NO. AFCRL-TR-74-0289, AFCRL-ERP-480  
PROJ: AF-8620  
TASK: 862008

UNCLASSIFIED REPORT

DESCRIPTORS: \*CONDENSATION NUCLEI, \*AIR POLLUTION,  
DROPS, HYGROSCOPICITY, PARTICLES, FOG,  
VISIBILITY, EVAPORATION, PARTICLE SIZE  
IDENTIFIERS: \*FOG DISPERSAL

(U)

(U)

THROUGH A SERIES OF SIMPLE CALCULATIONS ON  
MONODISPersed FOGS, IT IS SHOWN THAT ATMOSPHERIC AIR  
POLLUTANTS IN THE FORM OF CLOUD CONDENSATION NUCLEI  
(CCN) CONTRIBUTE TO A LOWERING OF THE VISIBILITY  
AND, THEREBY, SERIOUSLY INHIBIT THE VISIBILITY-  
IMPROVING CAPABILITY OF SOME EVAPORATION TECHNIQUES  
OF WARM FOG MODIFICATION. IN EXTREME POLLUTION,  
WHERE THE CCN COUNTS ARE IN EXCESS OF 1000/CC AND  
THE INITIAL VISIBILITY IS, THEREFORE, VERY LOW, THOSE  
TECHNIQUES THAT ONLY DEPRESS RELATIVE HUMIDITY A FEW  
PERCENT, FOR EXAMPLE, HYGROSCOPIC PARTICLE SEEDING,  
COULD BE RENDERED ALMOST POWERLESS IN IMPROVING  
VISIBILITY TO PRACTICALLY USEFUL LEVELS. THOSE FOG  
DISPERSAL TECHNIQUES THAT OF PRACTICAL NECESSITY  
GENERALLY DEPRESS THE RELATIVE HUMIDITY BY MORE THAN  
FIVE % SUCH AS THERMAL FOG DISPERSAL, ARE NOT SO  
SERIOUSLY HAMPERED BY ATMOSPHERIC POLLUTANTS.  
(MODIFIED AUTHOR ABSTRACT)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 786 456 7/4 20/6 4/2  
RADIATION RESEARCH ASSOCIATES INC FORT WORTH TEX

SCATTERING CHARACTERISTICS OF HOMOGENEOUS AND  
INHOMOGENEOUS PARTICLES: AEROSOL  
SCATTERING IN THE IR. (U)

DESCRIPTIVE NOTE: SUPPLEMENT NO. 2 (FINAL) TO PART  
1, 29 JAN-31 JUL 73,  
NOV 73 148P BLATTNER, WOLFRAM G. ; WELLS,  
MICHAEL B. ;  
REPT. NO. RRA-T7313-2  
CONTRACT: F19628-73-C-0130  
PROJ: AF-7621  
TASK: 762106  
MONITOR: AFCRL TR-74-0026

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO SUPPLEMENT NO. 1 TO PART  
1, AD-778 849.

DESCRIPTORS: \*AEROSOLS, \*MIE SCATTERING, \*LIGHT  
SCATTERING, TABLES(DATA), ANGLES, INFRARED  
RADIATION, DROPS, PARTICLES, DUST, CROSS  
SECTIONS, WATER, REFRACTIVE INDEX, OPTICAL  
PROPERTIES, ABSORPTION(PHYSICAL), COMPUTATIONS,  
ALBEDO (U)

IDENTIFIERS: ABSORPTIVITY, AMMONIUM SULFATES (U)

RESULTS ARE PRESENTED OF MIE CALCULATIONS WHICH  
WERE RUN TO DETERMINE THE SCATTERING, ABSORPTION AND  
EXTINCTION COEFFICIENTS AND PHASE MATRIX FOR  
SPHERICAL AEROSOL PARTICLES IN THE INFRARED ASSUMING  
A R TO THE -4.5 POWER SIZE DISTRIBUTION. THE  
AEROSOL PARTICLES CONSIDERED IN THE MIE  
CALCULATIONS WERE WATER DROPLETS, SEA-SALT PARTICLES,  
WATER SOLUBLES, DUST PARTICLES, AND AMMONIUM SULPHATE  
PARTICLES. THE INFRARED WAVELENGTHS USED IN THE  
MIE CALCULATIONS VARIED FROM 2.5 TO 40 MICROMETERS.  
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 806 393 6/6 19/3  
ARMY MEDICAL RESEARCH LAB FORT KNOX KY

SILICA CONTENT OF DUST FROM TANK RANGES, (U)

JAN 47 11P KRUSE, C. A. ; CAREY, P. H.  
; HOWE, D. J. ;  
REPT. NO. USAMRL-1  
PROJ: USAMRL-57-1

UNCLASSIFIED REPORT

DESCRIPTORS: (\*TANKS(COMBAT VEHICLES), \*DUST),  
RESPIRATORY DISEASES, HAZARDS, AIR POLLUTION, SAND,  
SILICON DIOXIDE, AIRBORNE, PARTICLES, PARTICLE SIZE,  
DISTRIBUTION, SOILS, RANGES(FACILITIES), MILITARY  
PERSONNEL, EXPOSURE(PHYSIOLOGY) (U)

IN THE FORT KNOX TANK TRAINING AREAS ANALYSES  
HAVE BEEN MADE OF SURFACE SOIL AND AIR-BORNE DUST IN  
TANKS ON MANEUVERS. THE RESULTS ARE: (1)  
SURFACE SOIL SAMPLES FROM TWO DISTANT TANK RANGES  
HAVE A HIGH CONCENTRATION OF SILICA WITH AN AVERAGE  
OF 74.3% TOTAL SILICA AND 63.9% FREE SILICA;  
(2) THE AIR-BORNE DUST WITHIN TANKS FROM THE SAME  
TWO TANK RANGES CONTAINS AN AVERAGE OF 21.5% BY  
WEIGHT OF PARTICLES BELOW AN EQUIVALENT DIAMETER OF  
THREE (3) MICRONS; (3) OF THE PARTICLES OF  
AIR-BORNE DUST LESS THAN THREE (3) MICRONS IN  
DIAMETER, 10% IS FREE SILICA; (4) THESE  
PARTICLES OF FREE SILICA LESS THAN THREE (3)  
MICRONS IN DIAMETER CONSTITUTE 2.2% BY WEIGHT OF  
THE TOTAL DUST. THE QUESTION IS RAISED WHETHER  
SUCH A CONCENTRATION OF HIGHLY SILICEOUS DUST,  
ESPECIALLY IN THE DANGEROUS SIZES LESS THAN TEN  
(10) MICRONS OR THREE (3) MICRONS IN  
DIAMETER, CONSTITUTES A MEDICAL HAZARD TO OPERATING  
ARMORED PERSONNEL. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 833 254 15/2  
PENNSYLVANIA STATE UNIV UNIVERSITY PARK DEPT OF AEROSPACE  
ENGINEERING

TURBULENT DIFFUSION OF SMALL PARTICLES. (U)

DESCRIPTIVE NOTE: QUARTERLY PROGRESS REPT. NO. 2, DEC  
67-MAR 68,

MAR 68 27P LUMLEY, JOHN L. ; SNYDER,  
WILLIAM H. ;

CONTRACT: DAAA15-67-C-0620

PROJ: DA-1C014501B71A

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AEROSOLS, DISTRIBUTION), REPORTS,  
CHEMICAL WARFARE AGENTS, DROPS, SIMULATORS, TURBULENCE,  
SPHERES, PARTICLE SIZE, DIFFUSION, SCATTERING,  
MATHEMATICAL ANALYSIS, WIND TUNNEL MODELS, INTENSITY,  
EQUATIONS OF MOTION, TEST METHODS (U)  
IDENTIFIERS: GRAPHS(CHARTS) (U)

IT IS THE PURPOSE OF THIS PROJECT TO DETERMINE THE  
LATER DIFFUSIVITY OF SINGLE SPHERICAL PARTICLES IN AN  
ISOTROPIC TURBULENT AIR FLOW AND THE CORRESPONDING  
LAGRANGIAN VELOCITY AUTOCORRELATION COEFFICIENT.  
THE PARTICLES ARE TO VARY IN SIZE, DENSITY, AND IN  
TIME CONSTANT, AND ARE TO HAVE A STABLE WAKE.  
RESULTS OF MEAN FLOW AND TURBULENCE INTENSITY  
MEASUREMENTS ARE PRESENTED. THEY SHOW THE MEAN  
VELOCITY PROFILES TO BE FLAT AND THE TURBULENCE TO BE  
HOMOGENEOUS IN PLANES PERPENDICULAR TO THE MEAN FLOW  
DIRECTION AND TO DECAY IN THE STREAMWISE DIRECTION AS  
PREDICTED. THE CALCULATION SHOWING WHAT SPREAD IN  
PARTICLES SIZE CAN BE TOLERATED TO RESULT IN AN  
ACCEPTABLE ERROR IN THE CORRELATION COEFFICIENT FOR  
THE SMALL PARTICLES IS PRESENTED. THE PROJECT ROOM  
WAS MADE READY FOR THE PARTICLE DETECTION SYSTEM.  
THE TIMING SYSTEM WAS MATCHED WITH THE TRIGGER  
CIRCUITS IN THE FLASH LIGHT SOURCES. THE ENTIRE  
CONTROL SYSTEM WAS SET-UP. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 840 898 6/16  
ARMY BIOLOGICAL LABS FREDERICK MD

MEASUREMENT OF THE RETENTION OF VARIOUS AEROSOLS IN  
THE RESPIRATORY TRACT USING A SCATTERED-LIGHT  
PARTICLE-COUNTER, (U)

AUG 67 19P ROHE, K. H. ; MOENIG, F. J.  
; BISA, KARL ;  
REPT. NO. TRANS-1989

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF HAUS DER TECHNIK (WEST  
GERMANY) (SIC) N68 P25-34 N.D.

DESCRIPTORS: (\*AEROSOLS, \*RESPIRATION), RESPIRATORY  
SYSTEM, PENETRATION, PARTICLE SIZE, CHARGED PARTICLES,  
LIGHT, SCATTERING, COUNTING METHODS, AEROBIOLOGY, WEST  
GERMANY (U)

IDENTIFIERS: TRANSLATIONS (U)

EXACT INFORMATION ABOUT THE DEPTH OF PENETRATION  
AND THE DEPOSITION OF AEROSOLS IN THE RESPIRATORY  
SYSTEM IS OF FUNDAMENTAL IMPORTANCE FOR  
AEROBIOLOGICAL PROBLEMS. THE DIFFERENT  
CONSTRUCTION OF THE VARIOUS MUCOSA COMPONENTS IN THE  
RESPIRATORY SYSTEM AS WELL AS THEIR SPECIAL FUNCTION  
MUST ALSO BE TAKEN INTO CONSIDERATION. HOW MANY  
PARTICLES OF A CERTAIN FRACTION FROM THE AEROSOL  
SPECTRUM ARE LAID DOWN ON SPECIALLY RESORPTIVE  
MEMBRANES IS THEREFORE DECISIVE AS REGARDS THE  
BIOLOGICAL HAZARD OF AN AEROSOL THAT IS INJURIOUS TO  
THE HEALTH. THE ABILITY OF AN AEROSOL TO PENETRATE  
THE AIRWAYS AND THE DEPOSITION OF THE PARTICLES  
DEPEND ESSENTIALLY ON THE SIZE OF THE INDIVIDUAL  
PARTICLES. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 867 285 14/2 9/3  
ARMY TEST AND EVALUATION COMMAND ABERDEEN PROVING GROUND  
MD

DUST TESTS.

(U)

DESCRIPTIVE NOTE: FINAL REPT. ON MATERIEL TEST PROCEDURE.

JAN 70 20P

REPT. NO. MTP-6-2-537

TASK: AMCR-310-6

UNCLASSIFIED REPORT

DESCRIPTORS: (\*ARMY EQUIPMENT, \*ENVIRONMENTAL TESTS),  
DUST, SAND, ELECTRONIC EQUIPMENT, TEST METHODS (U)

THE REPORT DESCRIBES TEST METHODS AND TECHNIQUES  
FOR DETERMINING THE ADVERSE EFFECTS OF SIMULATED DRY-  
DUST (FINE SAND) LADEN ATMOSPHERE ON THE  
PERFORMANCE AND CHARACTERISTICS OF COMMUNICATIONS,  
SURVEILLANCE AND AVIONIC ELECTRONIC EQUIPMENT.  
THE EVALUATION IS RELATED TO THE REQUIREMENTS  
EXPRESSED IN QUALITATIVE MATERIEL REQUIREMENTS,  
SMALL DEVELOPMENT REQUIREMENTS, TECHNICAL  
CHARACTERISTICS OR OTHER APPLICABLE DOCUMENTATION.  
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 875 672 13/3 14/2  
ARMY TEST AND EVALUATION COMMAND ABERDEEN PROVING GROUND  
MD

DUST CONTROL MATERIAL. (U)

DESCRIPTIVE NOTE: FINAL REPT. ON MATERIEL TEST PROCEDURE.

JUL 70 16P

REPT. NO. MTP-9-3-285

PROJ: AMCR-310-6

UNCLASSIFIED REPORT

DESCRIPTORS: (\*DUST, CONTROL), (\*MATERIALS, TEST  
METHODS), TEST EQUIPMENT, COST EFFECTIVENESS,  
INSTRUMENTATION, SAFETY, PERSONNEL,  
PERFORMANCE(ENGINEERING), INSTALLATION, TRANSPORTATION,  
HUMAN FACTORS ENGINEERING, MAINTENANCE, ARMY EQUIPMENT(U)  
IDENTIFIERS: \*COMMON ENGINEERING TEST PROCEDURES,  
\*DUST CONTROL, \*MATERIALS (U)

THE ARMY SERVICE TEST PROCEDURE DESCRIBES TEST  
METHODS AND TECHNIQUES FOR EVALUATING THE PERFORMANCE  
AND CHARACTERISTICS OF DUST CONTROL MATERIALS, AND  
FOR DETERMINING THEIR SUITABILITY FOR SERVICE USE BY  
THE U. S. ARMY. THE EVALUATION IS RELATED TO  
CRITERIA EXPRESSED IN APPLICABLE QUALITATIVE MATERIEL  
REQUIREMENTS, SMALL DEVELOPMENT REQUIREMENTS,  
TECHNICAL CHARACTERISTICS, OR OTHER APPROPRIATE  
DESIGN REQUIREMENTS AND SPECIFICATIONS.  
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 884 446 21/2 13/2 21/5  
PURDUE UNIV LAFAYETTE IND JET PROPULSION CENTER

AN INVESTIGATION OF GAS TURBINE COMBUSTORS  
WITH HIGH INLET AIR TEMPERATURES. PART  
I: COMBUSTOR MODELLING.

(U)

DESCRIPTIVE NOTE: ANNUAL REPT. NO. 2, MAR 70-MAR 71,  
MAR 71 118P HAMMOND, DEAN C. , JR.;  
MELLOR, ARTHUR M. ;  
REPT. NO. TM-71-1  
CONTRACT: DAAE07-69-C-0756  
MONITOR: TACOM TR-11321

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO PART 2, AD-884 359L AND  
PART 3, AD-884 357L.

DESCRIPTORS: (\*EXHAUST GASES, MATHEMATICAL PREDICTION),  
(\*COMBUSTION CHAMBERS, MATHEMATICAL MODELS), (\*GAS  
TURBINES, AIR POLLUTION), THERMAL RADIATION, THERMAL  
ANALYSIS, HYDROCARBONS, PARTICLES, DYNAMICS, JET MIXING  
FLOW, DESIGN (U)  
IDENTIFIERS: \*GAS TURBINE COMBUSTORS (U)

AN ANALYTICAL MODEL HAS BEEN DEVELOPED WHICH WILL  
PREDICT THE PERFORMANCE AND POLLUTANT EMISSIONS OF  
GAS TURBINE COMBUSTORS. THE ENTIRE GAS TURBINE  
COMBUSTOR IS APPROXIMATED AS A COLLECTION OF  
PERFECTLY STIRRED ZONES. WITHIN EACH ZONE A GENERAL  
HYDROCARBON COMBUSTION MECHANISM IS USED TO PREDICT  
THE GAS COMPOSITION AND TEMPERATURE. THE ZONE  
VOLUMES AND SIZES ARE ASSIGNED FROM CONSIDERATION OF  
THE THEORETICALLY PREDICTED GAS FLOWS THEREBY  
APPROXIMATING THE MIXING BEHAVIOR OF THE SYSTEM.  
SELECTED PREDICTIONS OF THE OVERALL MODEL FOR A  
'TYPICAL' AIRCRAFT COMBUSTOR ARE PRESENTED. THESE  
RESULTS ARE SEEN TO BE QUALITATIVELY ACCURATE AND  
FALL IN THE RANGE OF VALUES TYPICALLY OBSERVED IN  
PRACTICAL SYSTEMS. (AUTHOR)

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 891 325 13/2  
AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF  
SYSTEMS AND LOGISTICS

A CASE STUDY IN POLLUTION CONTROL: WRIGHT-  
PATTERSON AIR FORCE BASE. (U)

DESCRIPTIVE NOTE: MASTER'S THESIS,  
AUG 71 71P ZECK, FRANCIS H. ;  
REPT. NO. SLSR-47-71B

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AIR POLLUTION, \*MILITARY FACILITIES),  
(\*AIR FORCE, AIR POLLUTION), LAW, HISTORY, CONTROL,  
INCINERATORS, EVAPORATION, OHIO, DEPARTMENT OF DEFENSE,  
AIRCRAFT ENGINES, PARTICLES, CARBON MONOXIDE, SULFUR  
COMPOUNDS, NITROGEN OXIDES, THESES (U)

IDENTIFIERS: \*AIR POLLUTION, \*CONTROL, GREENE  
COUNTY(OHIO), SULFUR DIOXIDE, \*WRIGHT-PATTERSON AIR  
FORCE BASE (U)

THE PROBLEM OF MAINTAINING ENVIRONMENTAL QUALITY  
FACES MANAGERS AT ALL LEVELS OF GOVERNMENT SERVICE.  
THE STUDY DESCRIBES HOW A SELECTED UNITED  
STATES AIR FORCE BASE MANAGED ITS AIR POLLUTION  
PROBLEMS. A NON-TECHNICAL INTRODUCTION INTO THE  
NATURE OF AIR POLLUTION IS GIVEN. THE HISTORY OF  
AIR POLLUTION LEGISLATION IS DESCRIBED WITH EMPHASIS  
ON STATUTES AND EXECUTIVE ORDERS WHICH HAD THE  
GREATEST EFFECT ON THE MILITARY ESTABLISHMENT. A  
BRIEF DESCRIPTION OF DEPARTMENT OF DEFENSE  
PROGRAMS FOR AIR POLLUTION CONTROL IS FOLLOWED BY A  
DETAILED DISCUSSION OF AIR FORCE POLICIES AND  
PROGRAMS. THE SPECIFIC AIR POLLUTANTS AT WRIGHT-  
PATTERSON AFB ARE DETAILED AS WELL AS METHODS  
USED FOR CONTROL. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD- 908 920 13/7 4/2  
NAVAL WEAPONS CENTER CHINA LAKE CALIF

SOLUTION BURNER FOR WEATHER MODIFICATION -  
ADVANCED DEVELOPMENT OF AN AIRBORNE JET  
SEEDER.

(U)

DESCRIPTIVE NOTE: SUMMARY REPT. JUL 70-JAN 72,  
JAN 73 33P CARROZ, JOHN W. DURHAM,  
MARK F. ;  
REPT. NO. NWC-TP-5415  
PROJ: A370-370G/216-C/2W37-120-000  
MONITOR: GIDEP 347.00.00.00-X7-155

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AEROSOL GENERATORS, AIRBORNE),  
(\*ARTIFICIAL PRECIPITATION, SPRAY TANKS), NUCLEATION,  
SOLUTIONS(MIXTURES), AMMONIUM COMPOUNDS, ACETONES,  
SILVER COMPOUNDS, IODIDES, CONCENTRATION(CHEMISTRY),  
WATER, BURNING RATE, PARTICLE SIZE, AIR, MIXTURES,  
RAMJET ENGINES, PRESSURE, GENERATORS, FLIGHT SPEEDS,  
UTILITY AIRCRAFT, OBSERVATION AIRCRAFT, ALTITUDE,  
DESIGN, FEASIBILITY STUDIES, RELIABILITY, SPRAY  
NOZZLES

(U)

IDENTIFIERS: \*AIRBORNE JET SEEDERS, AJS(AIRBORNE JET  
SEEDERS), CESSNA 337 AIRCRAFT

(U)

AS PART OF A COLD CLOUD MODIFICATION SUBSYSTEM, THE  
NAVAL WEAPONS CENTER HAS DESIGNED, DEVELOPED,  
AND TESTED AN AIRBORNE JET SEEDER (AJS), WHICH  
OPERATES ON THE RAMJET PRINCIPLE. UNDER  
APPROXIMATELY 120-LB/SQ IN. PRESSURE, A SWIRL NOZZLE  
SPRAYS A SOLUTION OF SILVER IODIDE, AMMONIUM IODIDE,  
AND ACETONE INTO A CHAMBER, WHERE IT IS MIXED WITH  
AIR AND BURNED. FROM EACH GRAM OF SILVER IODIDE IN  
THE SOLUTION, ABOUT 10 TO THE 14TH POWER SILVER  
IODIDE PARTICLES (NUCLEI), EACH WITH A RADIUS OF  
NOT MORE THAN 0.2 MICRON, ARE DELIVERED FROM THE AFT  
END. USERS CAN VARY NOZZLE SIZE AND SOLUTION  
CONCENTRATION TO OPTIMIZE THE COUNT FOR PARTICULAR  
MISSIONS. THE AJS OPERATED SUCCESSFULLY AT  
VARIOUS SPEEDS AND ALTITUDES WHEN FLIGHT-TESTED WITH  
A CESSNA 337 AIRCRAFT. ACETONE SOLUTIONS  
CONTAINING UP TO 10% OF SILVER IODIDE IGNITED AND  
BURNED. SOLUTIONS OF 10% LITHIUM CHLORIDE  
DISSOLVED IN METHANOL AND ACETONE BURNED, ALSO.  
UNDER CONSIDERATION ARE DESIGN MODIFICATIONS TO  
ADAPT THE AJS FOR BURNING OTHER SOLUTIONS THAT  
WOULD PRODUCE PARTICLES USEFUL FOR GENERATING SMOKE,  
MEASURING AIR CURRENTS.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A000 165 6/10

FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

CHRONIC BRONCHITIS FROM THE ACTION OF FLAX  
DUST,

(U)

OCT 74 11P SKEPYAN, N. A. ; SURIN, L.

N. ;

REPT. NO. FTD-MT-24-1131-74

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED MACHINE TRANS. OF  
ZDRAVOOKHRANENIE BELORUSSI (USSR) V16 N2 P76-78 FEB  
70, BY GALE M. WEISENBARGER.

DESCRIPTORS: \*RESPIRATORY DISEASES, \*DUST,  
\*INDUSTRIAL HYGIENE, \*AIR POLLUTION, \*ALLERGIC  
DISEASES, RESPIRATORY SYSTEM, SMELL, SENSITIVITY,  
USSR, TRANSLATIONS, IMMUNOLOGY

(U)

IDENTIFIERS: CHRONIC DISEASES, ALLERGENS,  
\*BRONCHITIS

(U)

THE REPORT PRESENTS INFORMATION WHICH CHARACTERIZES  
THE FREQUENCY OF CHRONIC BRONCHITIS OF WORKERS  
DEPENDING ON LENGTH OF INDUSTRIAL SERVICE AND  
SENSITIZATIONS OF THE HEALTHY AND OF PATIENTS WITH  
CHRONIC BRONCHITIS TO FLAX DUST. IN THE DEVELOPMENT  
OF CHRONIC BRONCHITIS SEVERAL FACTORS ARE  
IMPORTANT: THE LONG-TERM ACTION OF INDUSTRIAL  
DUST, THE SENSITIZATION OF THE ORGANISM, AND AGE.  
CONSIDERING THAT CHRONIC BRONCHITIS - BY NO MEANS  
AN INOFFENSIVE DISEASE - CONTRIBUTES TO THE  
SIGNIFICANT LOWERING OF FUNCTIONAL INDICATORS OF  
EXTERNAL RESPIRATION OF THOSE AFFECTED, IT IS  
NECESSARY TO PAY GREAT ATTENTION TO THE LATTER.  
THOSE PERSONS WITH CHRONIC BRONCHITIS WITHOUT  
BREATHING DEFICIENCY NEED THE TIMELY CONDUCTING OF  
INHALATION THERAPY, SANATORIUM AND SPA TREATMENT. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A001 564 13/2 1/5  
ARGONNE NATIONAL LAB ILL ENERGY AND ENVIRONMENTAL SYSTEMS  
DIV

AIRPORT VICINITY AIR POLLUTION STUDY.  
MODEL APPLICATION AND VALIDATION AND AIR  
QUALITY IMPACT ANALYSIS AT WASHINGTON  
NATIONAL AIRPORT.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
JUL 74 211P WANG, I. T. ; ROTE, D. M. ;  
CONLEY, L. A. ;  
CONTRACT: DOT-FA71WAI-223  
MONITOR: FAA-RD 74-132

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-780 049.

DESCRIPTORS: \*AIRPORTS, \*AIR POLLUTION,  
DISPERSIONS, COMPUTERIZED SIMULATION, AIR QUALITY,  
DISTRICT OF COLUMBIA, MODELS, DATA PROCESSING,  
EXHAUST GASES, COMPUTER PROGRAMMING, CARBON  
MONOXIDE, NITROGEN OXIDES, HYDROCARBONS,  
PARTICLES, AIR TRAFFIC

(U)

IDENTIFIERS: AIRCRAFT EXHAUST, \*AIR QUALITY DATA,  
\*WASHINGTON NATIONAL AIRPORT, ATMOSPHERIC  
DIFFUSION, MOTOR VEHICLES

(U)

THE REPORT DESCRIBES A NEW VERSION OF THE AIRPORT  
VICINITY AIR POLLUTION MODEL (AVAP  
MODEL) DEVELOPED BY THE ENERGY AND  
ENVIRONMENTAL SYSTEMS DIVISION OF ARGONNE  
NATIONAL LABORATORY. THE NEW AVAP MODEL  
FEATURES A SIMPLIFIED AND GENERALIZED INPUT STRUCTURE  
AS WELL AS A BUILT-IN AIRPORT EMISSIONS COMPUTATIONAL  
PACKAGE. APPLICATION AND VALIDATION OF THE MODEL  
HAVE BEEN CARRIED OUT USING THE AIRPORT ACTIVITY AND  
AIR QUALITY DATA COLLECTED AT WASHINGTON NATIONAL  
AIRPORT. A DETAILED ACCOUNT OF THIS EFFORT IS  
GIVEN. THE PRESENT REPORT ALSO INCLUDES AN  
ANALYSIS OF THE IMPACT ON AIR QUALITY IN THE VICINITY  
OF WASHINGTON NATIONAL AIRPORT OF AIRPORT-  
RELATED POLLUTANT EMISSIONS USING THE AVAP MODEL.  
THE AIR QUALITY IMPACT IS EVALUATED BY COMPARING  
THE COMPUTED AIR QUALITY CONCENTRATIONS WITH THE  
APPROPRIATE FEDERAL AIR QUALITY STANDARDS FOR  
A VARIETY OF COMBINATIONS OF AIRPORT ACTIVITY AND  
METEOROLOGICAL CONDITIONS.

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A002 192 13/2  
NAVAL RESEARCH LAB WASHINGTON D C

THE NRL ATMOSPHERE: TRENDS IN AIR  
QUALITY.

(U)

DESCRIPTIVE NOTE: MEMORANDUM REPT.,  
OCT 74 29P STAMULIS, ARISTIDES ;  
REPT. NO. NRL-MR-2902

UNCLASSIFIED REPORT

DESCRIPTORS: \*AIR POLLUTION, \*NAVAL RESEARCH  
LABORATORIES, AIR QUALITY, METHANE, CARBON  
MONOXIDE, NITROGEN OXIDES, OZONE, SULFUR OXIDES,  
HYDROCARBONS, WIND, METEOROLOGICAL PHENOMENA,  
CONCENTRATION (COMPOSITION), TEMPERATURE  
INVERSION

(U)

IDENTIFIERS: \*AIR QUALITY DATA, NITROGEN DIOXIDE,  
SULFUR DIOXIDE, WIND ROSES, \*AIR POLLUTION  
SAMPLING

(U)

THE AIR POLLUTANTS CURRENTLY BEING MEASURED AT THE  
NRL AIR MONITORING STATION ARE METHANE, CARBON  
MONOXIDE, NITROGEN DIOXIDE, OZONE, SULFUR DIOXIDE,  
AND TOTAL HYDROCARBONS. THE TRENDS IN THE  
CONCENTRATIONS OF THESE POLLUTANTS ARE EXPLAINED BY  
THE METEOROLOGICAL CONDITIONS AND THE POLLUTION  
EMISSION SOURCES AT OR NEAR THE LABORATORY. THE  
USE OF THE WIND ROSE IS EXPLAINED AS A USEFUL DEVICE  
IN DETERMINING THE CONCENTRATION VALUES DUE TO WIND  
SPEED AND WIND DIRECTION. THE SERIOUSNESS OF  
TEMPERATURE INVERSIONS ARE EXPLAINED AND THEIR ROLE  
IN INCREASED CONCENTRATIONS OF POLLUTANTS ARE  
DESCRIBED. THE SITUATION IS CONSIDERED IMPORTANT  
SINCE 85 TEMPERATURE INVERSIONS WERE RECORDED AT  
NRL DURING A 12-MONTH PERIOD. THE MINIMUM,  
MAXIMUM, AND AVERAGE RANGE OF THE SIX POLLUTANTS ARE  
GIVEN.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A002 510 4/1 6/6  
STANFORD RESEARCH INST MENLO PARK CALIF

STRATOSPHERIC ELECTRICITY.

(U)

DESCRIPTIVE NOTE: SCIENTIFIC NOTE B,  
74 9P HAKE, R. D., JR; PIERCE, E.  
T. ;  
CONTRACT: N00014-74-C-0134  
PROJ: SRI-3062

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN INTERNATIONAL CONFERENCE  
ON THE ENVIRONMENTAL IMPACT OF AEROSPACE OPERATIONS  
IN THE HIGH ATMOSPHERE (2ND) PREPRINT VOLUME,  
P47-52, 8-10 JUL 74.

SUPPLEMENTARY NOTE:

DESCRIPTORS: \*ATMOSPHERIC ELECTRICITY,  
\*STRATOSPHERE, AIR POLLUTION, AEROSOLS, PARTICLE  
SIZE, ION DENSITY, RECOMBINATION REACTIONS,  
CONDENSATION NUCLEI, VOLCANOES, METEOROLOGICAL  
DATA, SUPERSONIC TRANSPORTS, EXHAUST GASES,  
EXPERIMENTAL DATA, MATHEMATICAL PREDICTION,  
REPRINTS

(U)

IDENTIFIERS: ENVIRONMENTAL IMPACT, AITKEN  
NUCLEI

(U)

THE MAIN FEATURES OF STRATOSPHERIC ELECTRICITY, AS  
DERIVED FROM EXPERIMENTAL DATA, ARE SUMMARIZED. IT  
IS SHOWN THAT THE AGREEMENT BETWEEN EXPERIMENTAL  
OBSERVATIONS AND THEORETICAL PREDICTIONS IS IMPROVED  
WHEN THE INFLUENCE OF STRATOSPHERIC AEROSOLS IS  
CONSIDERED. VARIOUS COMBINATIONS OF AEROSOL NUMBER  
DENSITY AND RADIUS CAN EXPLAIN THE OBSERVED EFFECTS.  
HOWEVER, THE MOST PROBABLE EXPLANATION INVOLVES  
AITKEN NUCLEI (RADIUS <0.1 MICRON AT DENSITIES  
RANGING FROM 100 TO 1000/CC. DENSITIES OF THESE  
ORDERS ARE LIKELY BOTH TO BE PRESENT NATURALLY AND TO  
BE PRODUCED BY THE OPERATION OF A FLEET OF SUPERSONIC  
TRANSPORTS (SSTS). (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A003 434 13/2 14/2  
NAVAL ORDNANCE LAB WHITE OAK MD

DEFENSE TECHNOLOGY FOR ENVIRONMENTAL  
PROTECTION.

(U)

DESCRIPTIVE NOTE: INTERIM REPT. JUN 73-JUN 74.  
JUL 74 68P BYRD, ELTON A. ; GEE, SHERMAN

REPT. NO. NOLTR-74-174  
PROJ: NOL-830/X01-12

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SPONSORED IN PART BY NATIONAL  
ENVIRONMENTAL RESEARCH CENTER. RESEARCH TRIANGLE  
PARK, N.C.

DESCRIPTORS: \*DEPARTMENT OF DEFENSE,  
\*LABORATORIES, \*AIR POLLUTION, SURVEYS,  
MONITORS, BIBLIOGRAPHIES, AEROSOLS, PARTICLES,  
PESTICIDES, TECHNOLOGY, FACILITIES, PUBLIC  
HEALTH

(U)

IDENTIFIERS: AIR POLLUTION DETECTION, PROJECT  
PLANNING, TECHNOLOGY TRANSFER

(U)

THIS REPORT PRESENTS THE STATUS OF WORK COMPLETED  
IN 1973-1974 TO IDENTIFY AND ASSESS THE EXTENT TO  
WHICH DEFENSE TECHNOLOGY IN DEPARTMENT OF DEFENSE  
LABORATORIES AND CENTERS, IS APPLICABLE TOWARD  
HELPING MEET TECHNOLOGICAL REQUIREMENTS IN AIR  
POLLUTION MONITORING AND CONTROL, AND TO INITIATE  
SPECIFIC TRANSFER ACTIONS AS APPROPRIATE. A  
BIBLIOGRAPHY IS BEING COMPILED, AND A COMPENDIUM OF  
LABORATORY CAPABILITIES IS INCLUDED. SPECIFIC  
TECHNOLOGY TRANSFER ACTIONS INITIATED IN THIS PERIOD  
ARE ALSO DESCRIBED.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A003 846 4/1 4/2 13/2  
TRANSPORTATION SYSTEMS CENTER CAMBRIDGE MASS

PROCEEDINGS OF THE THIRD CONFERENCE ON THE  
CLIMATIC IMPACT ASSESSMENT PROGRAM,  
FEBRUARY 26-MARCH 1, 1974.

(U)

DESCRIPTIVE NOTE: CONFERENCE PROCEEDINGS,  
NOV 74 609P BRODERICK, ANTHONY J. ;HARD,  
THOMAS M. ;  
REPT. NO. TSC-OST-74-15  
CONTRACT: DOT-PPA-OS-520

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO REPORT DATED APR 73, PB-  
221 166.

DESCRIPTORS: \*AIR POLLUTION, \*STRATOSPHERE, OZONE,  
ATMOSPHERIC CIRCULATION, MEETINGS, CLIMATE,  
AEROSOLS, ATMOSPHERIC CHEMISTRY, PHOTOCHEMICAL  
REACTIONS, ULTRAVIOLET RADIATION, AEROSOLS,  
CHEMICAL COMPOSITION, TROPOSPHERE, ATMOSPHERIC  
PHYSICS, GAS ANALYSIS

(U)

IDENTIFIERS: \*CLIMATIC IMPACT ASSESSMENT  
PROGRAM, AIRCRAFT EXHAUST, ATMOSPHERIC  
COMPOSITION, CLIMATIC CHANGES, ATMOSPHERIC  
TRANSPORT, AIR POLLUTION DETECTION, ATMOSPHERIC  
MODELS, ECONOMIC ANALYSIS, DOT/4GZ/GA, DOT/  
5C, REMOTE SENSING

(U)

THIS VOLUME CONTAINS THE PROCEEDINGS OF THE THIRD  
CONFERENCE ON THE CLIMATIC IMPACT ASSESSMENT  
PROGRAM (CIAP), HELD AT THE DOT TRANSPORTATION  
SYSTEMS CENTER FROM FEBRUARY 26 TO MARCH 1,  
1972. IT INCLUDES 45 INVITED PAPERS, 20 UNSCHEDULED  
PRESENTATIONS, AND EDITED QUESTION-AND-ANSWER  
SESSIONS FOLLOWING SOME OF THE PAPERS. THE  
CONFERENCE WAS ESSENTIALLY A PROGRESS REPORT ON  
CIAP. THEREFORE, SOME OF THE PAPERS CONTAIN NEW  
DATA NOT YET PUBLISHED ELSEWHERE, AND OTHERS DESCRIBE  
EXPERIMENTAL EQUIPMENT. REPORTS ON WORK RELEVANT  
TO CIAP, THOUGH NOT SPONSORED BY IT, ARE ALSO  
INCLUDED. THE SUBJECTS COVERED INCLUDE AIRCRAFT-  
ENGINE EMISSIONS, THE NATURE OF THE 'UNDISTURBED'  
STRATOSPHERE OF 1974, THE NATURE OF THE 'PERTURBED'  
STRATOSPHERE OF 1990-2025, THE POSSIBLE RESULTING  
TROPOSPHERIC PERTURBATIONS, AND THE BIOLOGICAL AND  
ECONOMIC EFFECTS OF SUCH PERTURBATIONS.

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A004 037 13/2 4/2  
CRAMER (H E) CO INC SALT LAKE CITY UTAH

DIFFUSION CLIMATOLOGY FOR TOOELE ARMY  
DEPOT, SOUTH AREA.

(U)

DESCRIPTIVE NOTE: FINAL REPT.

NOV 74 167P

CONTRACT: DAAD09-74-C-0006

PROJ: ~~USATECOM-5-CO-523-ECP-004~~

MONITOR: DPG FR-C965A

UNCLASSIFIED REPORT

DESCRIPTORS: \*AIR POLLUTION, \*MILITARY FACILITIES,  
DIFFUSION, DEPOTS, FLUE GASES, WIND, SEASONAL  
VARIATIONS, UTAH, ATMOSPHERIC TEMPERATURE, MIXING,  
DEMILITARIZATION, TURBULENCE, TABLES(DATA)

(U)

IDENTIFIERS: \*TOOELE ARMY DEPOT, \*ATMOSPHERIC  
DIFFUSION

(U)

A DIFFUSION CLIMATOLOGY FOR TOOELE ARMY  
DEPOT, SOUTH AREA, HAS BEEN GENERATED. IT  
SPECIFICALLY ADDRESSES THOSE METEOROLOGICAL  
PARAMETERS WHICH ARE PERTINENT TO PLANNED  
DEMILITARIZATION OPERATIONS. THE STUDY IS DESIGNED  
TO PROVIDE TOOELE ARMY DEPOT PERSONNEL INVOLVED  
IN DEMILITARIZATION OPERATIONS INFORMATION WITH  
RESPECT TO RELATED POTENTIAL AIR POLLUTION PROBLEMS. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A004 103 20/6 17/5 22/2  
ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AIR FORCE  
STATION TENN

DEGRADATION OF LOW SCATTER MIRRORS BY  
PARTICLE CONTAMINATION.

(U)

DESCRIPTIVE NOTE: FINAL REPT. 1 FEB-30 JUN 74,  
JAN 75 36P YOUNG, R. P. ;  
REPT. NO. AEDC-TR-74-109  
PROJ: AF-641A, ARO-V41P-24B

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH ARO,  
INC., TULLAHOMA, TENN. REPT. NO. ARO-VKF-TR-  
74-84.

DESCRIPTORS: \*INFRARED DETECTORS, \*MIRRORS,  
\*CONTAMINANTS, REFLECTANCE, SURFACES, SATELLITE  
TRACKING SYSTEMS, DUST, SCATTERING, PARTICLE SIZE,  
SCATTERING, TEST EQUIPMENT, CARBON DIOXIDE LASERS,  
MOLECULAR BEAMS, MATHEMATICAL MODELS

(U)

IDENTIFIERS: CONTAMINATED SURFACES

(U)

MIRRORS WITH VERY LOW SCATTERING OPTICAL SURFACES  
ARE BEING USED IN SPACE BORNE IR SENSORS. DUST  
PARTICLES DEPOSITING ON THE SURFACE OF THESE LOW  
SCATTER MIRRORS CAN CAUSE AN INCREASE IN THE AMOUNT  
OF RADIATION SCATTERED. A STUDY WAS MADE TO  
DETERMINE THE EFFECT OF PARTICLE CONTAMINANT ON THE  
MIRROR SCATTERING PROPERTIES. RESULTS OF THE  
SCATTERING MEASUREMENTS WERE COMPARED WITH PREDICTED  
VALUES, BASED ON AN ASSUMED LAMBERTIAN DISTRIBUTION  
OF THE SCATTERED RADIATION. PARTICLES OF SIZES  
SMALLER THAN THE INCIDENT RADIATION WAVELENGTH  
PRODUCED LESS SCATTERED RADIATION THAN PREDICTED;  
WHEREAS, PARTICLES OF THE SIZE OR LARGER THAN THE  
INCIDENT RADIATION WAVELENGTH PRODUCED MORE SCATTERED  
RADIATION THAN PREDICTED.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A006 239 13/2 1/2  
AIR FORCE WEAPONS LAB KIRTLAND AFB N MEX

USAF AIRCRAFT POLLUTION EMISSION FACTORS AND  
LANDING AND TAKEOFF (LTO) CYCLES. (U)

DESCRIPTIVE NOTE: FINAL REPT. 1 JUN-1 NOV 74,  
FEB 75 48P NAUGLE, DENNIS F. ; NELSON,  
STEVEN R. ;  
REPT. NO. AFWL-TR-74-303

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO REPORT DATED OCT 74, AD/  
A-001 826.

DESCRIPTORS: \*AIR POLLUTION, \*MILITARY FACILITIES,  
\*JET AIRCRAFT, \*TAKEOFF, EMISSION CONTROL,  
LANDING, FLIGHT MANEUVERS, AIRCRAFT ENGINES,  
HYDROCARBONS, AIR TRAFFIC, NITROGEN OXIDES,  
CARBON MONOXIDE, TABLES(DATA) (U)

ANALYSIS OF TOTAL POLLUTION EMISSIONS FROM USAF  
AIRCRAFT REQUIRES BASIC DATA SUCH AS AIRCRAFT ENGINE  
POLLUTION EMISSION FACTORS AND LANDING AND TAKEOFF  
(LTO) TIME-IN-MODES. THE REPORT UPDATES THE LIST  
OF MEASURED POLLUTION EMISSION FACTORS SPECIFIC TO  
EACH MAJOR USAF AIRCRAFT ENGINE TYPE. RESULTS OF  
ORIGINAL RESEARCH TO DEFINE USAF LTO CYCLE TIMES  
FOR NINE OPERATIONAL MODES PER AIRCRAFT TYPE ARE  
PRESENTED. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A006 585 11/7  
DUGWAY PROVING GROUND UTAH

DISTRIBUTION OF PARTICLES (BY NUMBER AND  
SIZE) IN MICRO-CEL E AND HI SIL 233  
DRY LIQUIDS. (U)

DESCRIPTIVE NOTE: DATA REPT.,  
FEB 75 22P BARRY, JOHN W. ; GRIFFITHS,  
LOWELL A. ;  
REPT. NO. DPG-DR-C621A  
PROJ: USATECOM-5-CO-153-000-023

UNCLASSIFIED REPORT

DESCRIPTORS: \*PARTICLE SIZE, \*DUST, INSECTICIDES (U)  
IDENTIFIERS: DRY LIQUID INSECTICIDES, ZECTRAN,  
FINES, \*DRY LIQUIDS (U)

FIVE SAMPLES OF DRY LIQUIDS (INSECTICIDE CARRIER  
DUSTS) WERE ANALYZED FOR PARTICLE COUNT AND SIZE  
DISTRIBUTION AT US ARMY DUGWAY PROVING  
GROUND FOR THE US DEPARTMENT OF AGRICULTURE  
FOREST SERVICE. A HIGH PERCENTAGE OF PARTICLES  
WERE LESS THAN 10 MICROMETERS IN DIAMETER. (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A006 696 14/2  
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

A PHOTOMETRIC METHOD FOR DETERMINING THE  
NUMBER AND SIZE OF DROPS OF ATOMIZED FUEL  
IN A FLOW,

(U)

JAN 75 13P BASEVICH, V. YA. ;  
REPT. NO. FTD-HT-23-643-75

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF PRIBORY I  
TEKHNKA EKSPERIMENTA (USSR) N6 P89-91 NOV/DEC 57,  
BY ROGER T. CROZIER.

DESCRIPTORS: \*DROPS, \*PARTICLE SIZE, \*PHOTOMETRY,  
\*COUNTERS, AIR, FUELS, USSR, TRANSLATIONS,  
AEROSOLS

(U)

A METHOD OF DETERMINING THE NUMBER AND SIZE OF FUEL  
DROPS IN AN AIR FLOW IS DESCRIBED. THE METHOD HAS  
BEEN BASED ON THE REFLECTION OF LIGHT DURING THE  
PASSAGE OF A DROP THROUGH A LIGHT BEAM AND THE  
RECORDING OF THE LIGHT PULSES WITH THE AID OF A  
PHOTOMULTIPLIER AND A CATHODE OSCILLOGRAPH OR  
COUNTING DEVICE.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A009 467 13/2

ENVIRONMENTAL HEALTH LAB MCCLELLAN AFB CALIF

AIR POLLUTION SOURCE SURVEY, PLATTSBURGH

AIR FORCE BASE, NEW YORK.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,

APR 74 67P

HUNDLEY, KENNETH E. ;

REPT. NO. EHL-M-74M-7

PROJ: EHL-M-AAF-336

UNCLASSIFIED REPORT

DESCRIPTORS: \*AIR POLLUTION, \*INCINERATORS,  
MILITARY FACILITIES, PARTICLES, SAMPLING,  
HOSPITALS, TEST METHODS, CARBON DIOXIDE, CARBON  
MONOXIDE, NEW YORK

(U)

IDENTIFIERS: \*AIR QUALITY DATA

(U)

PARTICULATE EMISSIONS AND DETAILED STACK SAMPLING  
RESULTS ARE PRESENTED FOR THE OIL-FIRED HOT WATER  
BOILERS AT THE CENTRAL HEATING PLANT,  
PLATTSBURGH AFB NY. THE STUDY WAS PERFORMED  
AT THE REQUEST OF THE COMMANDER, USAF HOSPITAL,  
PLATTSBURGH, TO DETERMINE COMPLIANCE WITH NEW  
YORK STATE EMISSION STANDARDS. MEASURED  
PARTICULATE EMISSIONS EXCEEDED STATE LIMITS.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A009 468 13/2  
ENVIRONMENTAL HEALTH LAB MCCLELLAN AFB CALIF

EMISSION STUDY, GRIFFISS AIR FORCE BASE,  
NEW YORK.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
APR 74 52P HUNDLEY, KENNETH E. ;  
REPT. NO. EHL-M-74M-6  
PROJ: EHL-M-AAF-329

UNCLASSIFIED REPORT

DESCRIPTORS: \*AIR POLLUTION, \*INCINERATORS,  
\*MILITARY FACILITIES, PARTICLES, BOILERS,  
SAMPLING, HOSPITALS, TEST METHODS, CARBON  
DIOXIDE, CARBON MONOXIDE, NEW YORK  
IDENTIFIERS: \*AIR QUALITY DATA

(U)

(U)

PARTICULATE EMISSIONS, PLUME OPACITIES, AND  
DETAILED STACK SAMPLING RESULTS ARE PRESENTED FOR THE  
OIL-FIRED STEAM PLANT, BLDG. 117, AT GRIFFISS  
AFB NY. THIS STUDY WAS PERFORMED AT THE  
REQUEST OF THE COMMANDER, USAF HOSPITAL,  
GRIFFISS AFB, TO DETERMINE COMPLIANCE WITH NEW  
YORK STATE EMISSION STANDARDS.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A009 470 13/2

ENVIRONMENTAL HEALTH LAB MCCLELLAN AFB CALIF

AIR POLLUTION SOURCE SURVEY, KINGSLEY AIR  
FORCE STATION, OREGON.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,

APR 74 56P HUNDLEY, KENNETH E. ;

REPT. NO. EHL-M-74M-3

PROJ: EHL-M-AAF-319

UNCLASSIFIED REPORT

DESCRIPTORS: \*AIR POLLUTION, \*INCINERATORS,  
\*MILITARY FACILITIES, PARTICLES, BOILERS,  
SAMPLING, TEST METHODS, CARBON DIOXIDE, CARBON  
MONOXIDE, EFFICIENCY, OREGON

(U)

IDENTIFIERS: \*AIR QUALITY DATA, AIR POLLUTION  
CONTROL EQUIPMENT

(U)

THE RESULTS OF A STACK STUDY TO DETERMINE THE  
EMISSIONS FROM THE CENTRAL HEATING PLANT,  
KINGSLEY AFS OREGON, ARE PRESENTED. THE STUDY  
WAS PERFORMED AT THE REQUEST OF THE BASE CIVIL  
ENGINEERING DIVISION FOR THE PURPOSE OF SELECTING  
APPROPRIATE AIR POLLUTION CONTROL EQUIPMENT AND/OR  
REQUIRED UNIT MODIFICATIONS/OPERATIONS FOR COMPLIANCE  
WITH STATE EMISSION STANDARDS. PERFORMANCE TESTS  
WERE CONDUCTED WHILE EACH UNIT WAS OPERATING NEAR THE  
MAXIMUM (RATED) STEAM PRODUCTION RATE.

ADDITIONAL COLLECTION EFFICIENCIES REQUIRED TO MEET  
STATE PARTICULATE EMISSIONS IS APPROXIMATELY 85%  
FOR THE TWO UNITS TESTED.

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A009 472 13/2  
ENVIRONMENTAL HEALTH LAB MCCLELLAN AFB CALIF

AIR POLLUTION SOURCE SURVEY, EDWARDS AIR  
FORCE BASE, CALIFORNIA.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,

APR 74 86P HUNDLEY, KENNETH E. ;

REPT. NO. EHL-M-74M-4

PROJ: EHL-M-AAF-328

UNCLASSIFIED REPORT

DESCRIPTORS: \*AIR POLLUTION, \*INCINERATORS,  
\*MILITARY FACILITIES, PARTICLES, SAMPLING, TEST  
METHODS, HOSPITALS, CARBON DIOXIDE, CARBON  
MONOXIDE, CALIFORNIA

(U)

IDENTIFIERS: \*AIR QUALITY DATA, EDWARDS AIR  
FORCE BASE

(U)

PARTICULATE EMISSIONS, PLUME OPACITIES AND DETAILED  
STACK SAMPLING RESULTS ARE PRESENTED FOR THE HOSPITAL  
PATHOLOGICAL INCINERATOR AT EDWARDS AFB CA.  
THIS TEST WAS PERFORMED TO DETERMINE COMPLIANCE  
WITH KERN COUNTY APCD RULES AND  
REGULATIONS. SAMPLING PROCEDURES GIVEN IN PHS  
SPECIFICATIONS FOR INCINERATOR TESTING AT  
FEDERAL FACILITIES PLUS ADDENDUM AND CFR,  
TITLE 40, CHAPTER I, SUBCHAPTER C, PT,  
60, WERE FOLLOWED AS CLOSELY AS PRACTICAL DURING  
TESTS.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A009 481 4/1

COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH  
ORGANIZATION EPPING (AUSTRALIA) DIV OF CLOUD PHYSICS

ATMOSPHERIC PARTICULATES. (U)

DESCRIPTIVE NOTE: ANNUAL REPT.,  
APR 75 12P BIGG, KEITH ;  
CONTRACT: N00014-75-C-0712  
PROJ: RR033-03  
TASK: RR033-03-01

UNCLASSIFIED REPORT

DESCRIPTORS: \*STRATOSPHERE, \*AEROSOLS, PARTICLE  
SIZE, SAMPLING, ELECTRON MICROSCOPY,  
METEOROLOGICAL BALLOONS, OPTICAL EQUIPMENT,  
AUSTRALIA (U)

THE REPORT GIVES A GENERAL ANALYSIS OF  
STRATOSPHERIC PARTICLES OVER AUSTRALIA DURING 1969  
AND 1970, AS DETERMINED BY VIEWING PARTICLE IMPACT  
SCREENS (EXPOSED DURING STRATOSPHERIC BALLOON  
FLIGHTS) WITH THE ELECTRON MICROSCOPE. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A010 227 4/1 13/2  
WYOMING UNIV LARAMIE DEPT OF PHYSICS AND ASTRONOMY

THE LOCAL INFLUENCE OF HURRICANES ON  
STRATOSPHERIC AEROSOLS. (U)

DESCRIPTIVE NOTE: FINAL ANNUAL REPT. 16 MAR 73-15 MAR  
74,

MAR 74 20P ROSEN, JAMES M. ; HOFMANN,  
DAVID J. ;  
CONTRACT: N00014-70-A-0266-0002

UNCLASSIFIED REPORT

DESCRIPTORS: \*AEROSOLS, \*STRATOSPHERE,  
\*HURRICANES, WIND VELOCITY, AIR POLLUTION,  
TROPICAL CYCLONES, ATMOSPHERIC SOUNDING,  
PARTICLES, CONCENTRATION (COMPOSITION), MIXING,  
TROPOSPHERE, REMOVAL (U)  
IDENTIFIERS: HURRICANE GILDA (U)

RECENTLY MUCH ATTENTION HAS BEEN GIVEN TO THE  
POSSIBLE POLLUTION OF THE STRATOSPHERE IN  
ANTICIPATION OF MAN'S INVASION INTO THIS HIGH-  
ALTITUDE REGION OF THE ATMOSPHERE. HOWEVER, VERY  
LITTLE EFFORT IN TERMS OF QUANTITATIVE MEASUREMENTS  
HAS BEEN MADE TO ASSESS THE SOURCES OF NATURAL  
STRATOSPHERIC 'POLLUTION,' WHICH MAY BE SO LARGE THAT  
MAN COULD NEVER COMPETE WITH THEM. BY VIRTUE OF  
ITS SIZE AND ENERGY DENSITY A WELL-DEVELOPED  
HURRICANE SHOULD BE ABLE TO INFLUENCE THE  
DISTRIBUTION OF TRACE CONSTITUENTS IN THE LOWER  
STRATOSPHERE, AT LEAST LOCALLY IF NOT ON A GLOBAL  
BASIS. THE AUTHORS DESCRIBE THE RESULTS OF THE  
FIRST ATTEMPT TO DETERMINE THE INFLUENCE OF A  
HURRICANE ON THE VERTICAL PROFILE OF AEROSOL WITHIN A  
500 MILE RADIUS OF THE CENTER OF THE STORM.  
AEROSOL PROFILES WERE OBTAINED OVER HURRICANE  
GILDA IN OCTOBER OF 1973. THE RESULTS SHOW A  
RELATIVELY CLEAN UPPER TROPOSPHERE WHICH HAS BEEN  
TENTATIVELY ATTRIBUTED TO A REMOVAL PROCESS  
ASSOCIATED WITH THE STORM ITSELF. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A010 646 13/2

COLD REGIONS RESEARCH AND ENGINEERING LAB HANOVER N H

ACCUMULATION OF ATMOSPHERIC POLLUTANTS NEAR  
FAIRBANKS, ALASKA, DURING WINTER.

(U)

DESCRIPTIVE NOTE: SPECIAL REPT.,

APR 75 30P JENKINS, T. F. ; MURRMANN, R.

P. ; BROCKETT, B. E. ;

REPT. NO. CRREL-SR-225

PROJ: DA-4-A-762720-A-896

TASK: 4-A-762720-A-89604

UNCLASSIFIED REPORT

DESCRIPTORS: \*AIR POLLUTION, \*MEASUREMENT,  
HYDROCARBONS, CARBON MONOXIDE, CARBON DIOXIDE,  
CONDENSATION NUCLEI, NITRIC ACID, SOURCES,  
TRAFFIC, WINTER, TEMPERATURE INVERSION, WIND  
VELOCITY, AIR QUALITY, ALASKA

(U)

IDENTIFIERS: FAIRBANKS (ALASKA)

(U)

CONCENTRATIONS OF HYDROCARBONS, CARBON MONOXIDE,  
CARBON DIOXIDE, CONDENSATION NUCLEI AND NITRIC OXIDE  
WERE MONITORED NEAR FAIRBANKS, ALASKA, AT A  
SELECTED LOCATION NOT UNDER THE DIRECT INFLUENCE OF A  
LOCAL POLLUTION SOURCE. THE MEASUREMENTS WERE MADE  
CONTINUOUSLY OVER A PERIOD OF WEEKS DURING JANUARY  
AND FEBRUARY 1973, THE PERIOD WHEN ATMOSPHERIC  
POLLUTION WOULD BE EXPECTED TO BE MOST SEVERE.  
ACCUMULATION AND DISSIPATION OF THE POLLUTANTS WAS  
FOUND TO BE RELATED TO ATMOSPHERIC INVERSION  
CONDITIONS, WIND SPEED AND DAILY TRAFFIC PATTERNS.  
MAXIMUM HOURLY AVERAGE CONCENTRATIONS OF  
HYDROCARBONS, CARBON MONOXIDE, CARBON DIOXIDE AND  
CONDENSATION NUCLEI WERE 9.7 PPM, 22.1 PP, 482 PPM  
AND MORE THAN 10,000 N/CU CM RESPECTIVELY.  
COMPARATIVE BACKGROUND LEVELS ARE REPORTED TO BE  
1.4 PPM, 0.1 PPM, 320 PPM AND 100-400 N/CU CM.  
VEHICLE EMISSIONS APPEARED TO BE THE PRIMARY SOURCE  
OF THE VARIOUS POLLUTANTS.

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A010 647 4/2  
DUGWAY PROVING GROUND UTAH

AN ATMOSPHERIC DISPERSION AND ENVIRONMENTAL  
PREDICTION TECHNIQUE.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
MAY 75 251P RUNOLFSO, VELL L. ; BOWER,  
CARL A. , JR;  
REPT. NO. DPG-FR-M920A  
PROJ: RDT/E-1-T-162111-AH-71, USATECOM-5-CO-403-  
000-051  
TASK: 1-T-162111-AH-71-A-5

UNCLASSIFIED REPORT

DESCRIPTORS: \*ATMOSPHERIC CIRCULATION, \*ATMOSPHERE  
MODELS, \*WIND, AIR POLLUTION, COMPUTERIZED  
SIMULATION, COMPUTER PROGRAMS, FORTRAN

(U)

IDENTIFIERS: ATMOSPHERIC DIFFUSION, FORTRAN 4  
PROGRAMMING LANGUAGE

(U)

AN ATMOSPHERIC DISPERSION AND ENVIRONMENTAL  
PREDICTION TECHNIQUE IN MODEL FORM WAS DEVELOPED  
AND VALIDATED. THE MODEL WAS DEVELOPED AS A  
COMPUTERIZED AID TO ENABLE RAPID OBJECTIVE ANALYSIS  
AND CALCULATION OF ATMOSPHERIC TRAJECTORIES AND  
STREAMLINES ON THE MESOSCALE. SEVERAL OBSERVATIONAL  
WEIGHTING TECHNIQUES WERE INVESTIGATED TO DETERMINE A  
CAPABILITY TO RECONSTRUCT AN IMPOSED WIND FIELD  
PATTERN FROM UNIFORM AND NONUNIFORM MEASUREMENTS IN  
THE WIND FIELD. FROM THIS, A NEW TECHNIQUE WAS  
DEVELOPED FOR APPLICATION TO WIND INTERPOLATION WHICH  
REPRESENTED AN IMPROVEMENT OVER THE THIESSEN  
POLYGON METHOD. THE DEVELOPED MODEL PROVIDES AN  
ADEQUATE INTERPOLATED REPRESENTATION OF WIND FIELDS  
AND ATMOSPHERIC TRAJECTORIES IN REAL OR NEAR-REAL  
TIME FOR INTERPRETATION OF ATMOSPHERIC POLLUTION AND  
HAZARD PROBLEMS. THE MODEL CAN BE PROGRAMMED ON  
SMALL PROGRAMMABLE CALCULATORS WITH STORAGE  
CAPABILITY.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A011 872 6/20 13/2  
AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB  
OHIO

AEROSOL PARTICLE SIZE AS A FACTOR IN  
PULMONARY TOXICITY.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,

DEC 74 15P PHALEN, R. F. ; RAABE, O.

G. ;

REPT. NO. AMRL-TR-74-125-PAPER-23

PROJ: AF-6302

TASK: 630201

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH  
LOVELACE FOUNDATION FOR MEDICAL EDUCATION AND  
RESEARCH, ALBUQUERQUE, N. MEX.

DESCRIPTORS: \*RESPIRATORY SYSTEM, \*AEROSOLS,  
\*PUBLIC HEALTH, \*TOXICITY, FUMES, MIST, DUST,  
AIR POLLUTION, LUNG, INHALATION, PARTICLE SIZE,  
RETENTION(GENERAL), DEPOSITION, AERODYNAMICS

(U)

IDENTIFIERS: \*AIR POLLUTION EFFECTS(HUMANS)

(U)

THE PARTICLE SIZE DISTRIBUTION OF INHALED AEROSOLS  
IS A FACTOR IN PULMONARY TOXICITY FOR SEVERAL  
REASONS. AMONG THOSE DISCUSSED ARE THE  
RELATIONSHIP BETWEEN PARTICLE SIZE AND AMOUNT OF  
TOXIC AGENT PER PARTICLE, THE INFLUENCE OF  
AERODYNAMIC AND REAL SIZE ON THE REGIONAL DEPOSITION  
WITHIN VARIOUS ANATOMICAL REGIONS OF THE RESPIRATORY  
TRACT AND THE EFFECT OF BOTH DEPOSITION SITE AND  
PARTICLE SIZE PER SE ON CLEARANCE KINETICS. THE  
ROLE OF PARTICLE SIZE IN THE ASSESSMENT OF  
ENVIRONMENTAL HAZARDS IS ONE THAT IS INCREASINGLY  
BEING REALIZED AS IMPORTANT.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A012 787 4/2 13/2  
AIR FORCE CAMBRIDGE RESEARCH LABS HANSCOM AFB MASS

BURDEN OF VOLCANIC DUST AND NUCLEAR DEBRIS  
AFTER INJECTION INTO THE STRATOSPHERE AT 40-  
58N, (U)

MAY 74 5P VOLZ, F. E. ;  
REPT. NO. AFCRL-TR-75-0386  
PROJ: AF-7621  
TASK: 762113

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN JNL. OF GEOPHYSICAL  
RESEARCH, V80 N18 P2649-2652, 20 JUN 75.

DESCRIPTORS: \*STRATOSPHERE, DUST CLOUDS,  
VOLCANOES, NUCLEAR WEAPON DEBRIS, NUCLEAR  
EXPLOSION TESTING, COMPARISON, TURBIDITY,  
POLLUTANTS, AIR POLLUTION, REPRINTS (U)  
IDENTIFIERS: CHINESE NUCLEAR TESTS, VOLCANIC  
DUST (U)

MERIDIONAL PROFILES OF TURBIDITY AT SOME PERIODS  
AFTER THE EXPLOSION OF KATMAI VOLCANO IN JUNE  
1912 AT 58 N ARE COMPARED WITH DEBRIS BURDEN FROM  
CHINESE NUCLEAR TESTS. KATMAI TURBIDITY WAS  
PREVIOUSLY OBTAINED FROM SOLAR RADIATION DATA, AND  
DEBRIS BURDEN WAS CALCULATED FROM PUBLISHED MIXING  
RATIO DATA. TURBIDITY AND BURDEN GENERALLY PEAK  
STRONGLY IN ARCTIC LATITUDES. ONLY TWO TESTS SHOW  
INDICATIONS OF A BULGE AT 30 DEG -45 N WHICH  
PROBABLY EXISTED FOR KATMAI DUST IN SPRING 1913.  
THE RESIDENCE TIME OF KATMAI DUST WAS FOUND TO  
HAVE BEEN ABOUT 1 YEAR, WHEREAS FALLOUT OF NUCLEAR  
DEBRIS SEEMS NOT TO HAVE STARTED BEFORE THE WINTER  
FOLLOWING THE TESTS. FOR SEPTEMBER 1912 THE  
TOTAL AMOUNT OF KATMAI AEROSOL IS ESTIMATED TO HAVE  
BEEN 13 MILLION METRIC TONS. ANALOGIES TO  
PREDICTED MERIDIONAL DISTRIBUTION OF SST POLLUTANTS  
ARE BEING MENTIONED. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A013 367 7/4 20/6 4/1  
ARMY ELECTRONICS COMMAND FORT MONMOUTH N J

AN IMPROVEMENT TO A METHOD FOR MEASURING THE  
ABSORPTION COEFFICIENT OF ATMOSPHERIC DUST  
AND OTHER STRONGLY ABSORBING POWDERS. (U)

DESCRIPTIVE NOTE: RESEARCH AND DEVELOPMENT TECHNICAL  
REPT.,

JUL 75 12P LINDBERG, JAMES D. ;  
REPT. NO. ECOM-5565  
PROJ: DA-1-T-061102-B-53-A  
TASK: 1-T-061102-B-53-A-19

UNCLASSIFIED REPORT

DESCRIPTORS: \*DUST, \*LIGHT TRANSMISSION,  
ABSORPTION COEFFICIENTS, ATMOSPHERIC PHYSICS,  
PARTICULATES, MEASUREMENT, ABSORPTION SPECTRA,  
ATTENUATION, POWDERS, MIXTURES, DILUENTS,  
BARIUM COMPOUNDS, SULFATES, WAVELENGTHS, WAVE  
PROPAGATION, ATMOSPHERES (U)  
IDENTIFIERS: \*ATMOSPHERIC DUST, DIFFUSE  
REFLECTANCE SPECTROSCOPY, KUBELKA-MUNK THEORY (U)

A METHOD, DESCRIBED IN A PREVIOUS PUBLICATION,  
PERMITS THE MEASUREMENT OF THE OPTICAL ABSORPTION  
COEFFICIENT OF STRONGLY ABSORBING PARTICULATE MATTER  
SUCH AS ATMOSPHERIC DUST. THIS IS DONE BY MIXING  
THE SAMPLE WITH A POWDER, AND MEASURING THE RESULTING  
DEGRADATION OF THE DIFFUSE REFLECTANCE OF THE POWDER.  
THIS REPORT SHOWS HOW THE SPECTRAL RANGE, OVER  
WHICH THE METHOD IS APPLICABLE, MAY BE EXTENDED BY  
ACCOUNTING FOR ABSORPTION OF LIGHT IN THE WEAKLY  
ABSORBING POWDER USED A DILUENT. AN EXAMPLE OF THE  
APPLICATION OF THE METHOD TO AN ATMOSPHERIC DUST  
SAMPLE IS PRESENTED, SHOWING THAT SATISFACTORY  
MEASUREMENTS CAN BE MADE FROM 0.3 TO ABOUT 1.6  
MICROMETERS, USING BASO4 AS A DILUENT. (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A014 650 13/2 4/1  
PURDUE UNIV LAFAYETTE IND DEPT OF CHEMISTRY

THE APPLICATION OF PATTERN RECOGNITION  
TECHNIQUES TO THE CHARACTERIZATION OF  
ATMOSPHERIC AEROSOLS.

(U)

DESCRIPTIVE NOTE: INTERIM TECHNICAL REPT.,  
AUG 75 16P PERONE, S. P. ; PICHLER, M. ;  
GAARENSTROOM, P. ; MOYERS, J. L. ;  
REPT. NO. TR-4  
CONTRACT: N00014-67-A-0226-0021  
PROJ: NR-051-552

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH ARIZONA  
UNIV., TUCSON. DEPT. OF CHEMISTRY.

DESCRIPTORS: \*AIR POLLUTION, \*AEROSOLS, \*PATTERN  
RECOGNITION, ARIZONA, CLUSTERING, PARTICLES,  
METEOROLOGICAL DATA, METALS,  
CONCENTRATION (COMPOSITION)  
IDENTIFIERS: TUCSON (ARIZONA)

(U)

(U)

MEASUREMENTS WERE MADE OF THE AMOUNTS OF 24  
COMPONENTS IN 24-HOUR SAMPLES OF ATMOSPHERIC  
PARTICULATES COLLECTED OVER A 12-MONTH PERIOD IN THE  
GREATER TUCSON AREA. TECHNIQUES OF PATTERN  
RECOGNITION WERE USED TO EXAMINE THE DATA BASE, WHICH  
ALSO INCLUDED METEOROLOGICAL INFORMATION COLLECTED  
DAILY OVER THE SAME PERIOD OF TIME. CLUSTERING  
METHODS GROUPED SIMILAR COMPONENTS TOGETHER.  
PRINCIPAL COMPONENT ANALYSIS SHOWED THAT MOST  
OF THE VARIANCE WAS CONTAINED IN ONLY A FEW  
DIMENSIONS.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A014 694 4/1

AIR FORCE CAMBRIDGE RESEARCH LABS HANSCOM AFB MASS

VOLCANIC TWILIGHTS FROM THE FUEGO ERUPTION,

(U)

DEC 74 5P VOLZ, F. E. ;  
REPT. NO. AFCRL-TR-75-0210  
PROJ: AF7621  
TASK: 762112

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN SCIENCE, V189 P48-50, 4  
JUL 75.

DESCRIPTORS: \*TWILIGHT, \*DUST CLOUDS, VOLCANOES,  
ATMOSPHERIC SCATTERING, LIGHT SCATTERING,  
STRATOSPHERE, STRIATIONS, AIR POLLUTION,  
AEROSOLS, DUST, PHOTOMETRY, OPTICAL RADAR, AIR  
POLLUTION, NEW ENGLAND, GUATEMALA, REPRINTS

(U)

STRIATED TWILIGHT GLOWS HAVE BEEN OBSERVED SINCE 26  
NOVEMBER 1974 IN NEW ENGLAND, INDICATING THE  
SPREAD OF STRATOSPHERIC DUST EARLIER OBSERVED OVER  
ARIZONA. SIMILAR PHOTOMETRIC RESULTS WERE  
OBTAINED FROM NEW MEXICO AND FLORIDA, AND  
TWILIGHTS IN PUERTO RICO SHOWED FEATURES NOT  
HITHERTO MEASURED. LETTERS AND VERBAL REPORTS  
INDICATE THE SOURCE TO BE ERUPTIONS OF FUEGO  
VOLCANO IN GUATEMALA BETWEEN 13 AND 23 OCTOBER  
1974. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A014 946 7/4 4/1 13/2 14/2  
6/16

BALLISTIC RESEARCH LABS ABERDEEN PROVING GROUND MD

A REVIEW OF SOME EXPERIMENTAL MEASUREMENTS  
ON DETECTORS FOR TRACE CHEMICALS IN THE  
ATMOSPHERE.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,

JUL 75 35P SHELTON, R. D. ; WALL, W.

A. ;

REPT. NO. BRL-1798

PROJ: DA-1-T-161102-B-53-A

UNCLASSIFIED REPORT

DESCRIPTORS: \*AIR POLLUTION, \*TRACE ELEMENTS,  
\*DETECTORS, \*REMOTE DETECTORS, \*ATMOSPHERES,  
TRACE GASES, EFFLUENTS, TRANSPORT PROPERTIES,  
IONS, SPECTROMETERS, MASS SPECTROMETERS, DRUGS,  
CONDENSATION NUCLEI, ELECTRON CAPTURE, THIN FILMS,  
BIOCHEMISTRY, CONTAMINANTS, SURVEILLANCE,  
AEROSOLS, PARTICLES, MOLECULES, DOGS, SMELL,  
BIOLUMINESCENCE

(U)

IDENTIFIERS: IONIC MOBILITY, \*PERSONNEL DETECTORS,  
\*AIR POLLUTION DETECTION

(U)

A NUMBER OF DETECTORS FOR TRACE CONTAMINANTS IN THE  
ATMOSPHERE HAVE BEEN DEVELOPED AND TESTED FOR  
ENVIRONMENTAL MEASUREMENTS, MILITARY SURVEILLANCE,  
AND LAW ENFORCEMENT. THIS PAPER SUMMARIZES THE WORK  
DONE BY AN ARMY LABORATORY IN THE AREA OF DETECTOR  
DEVELOPMENT AND EVALUATION, AND SPECULATES ON FUTURE  
EVOLUTION IN THIS IMPORTANT AREA. DETECTORS  
SUBJECTED TO DEVELOPMENT AND EVALUATION INCLUDED  
ELECTRIC QUADRUPOLE MASS SPECTROMETERS, THIN FILM  
DETECTORS, BIOCHEMICAL SENSORS, DOGS, ION MOBILITY  
SPECTROMETERS, ELECTRON CAPTURE DEVICES, CONDENSATION  
NUCLEI DETECTORS, AND REMOTE SENSORS.

(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A015 427 7/4 15/2  
SOUTHERN RESEARCH INST BIRMINGHAM ALA

INTERFERENCE STUDIES FOR ADVANCED POINT  
SAMPLING ALARMS.

(U)

DESCRIPTIVE NOTE: REPT. ON PHASE 1, 28 APR-30 JUN  
75,

AUG 75 69P DISMUKES, EDWARD B. ; BARRETT,  
WILLIAM J. ;  
REPT. NO. 3496-2  
CONTRACT: DAAA15-75-C-0126  
MONITOR: ED CR-76009

UNCLASSIFIED REPORT

DESCRIPTORS: \*TOXIC AGENT ALARMS, \*GAS DETECTORS,  
INTERFERENCE, CHEMICAL WARFARE AGENTS, PARTICLES,  
AIR POLLUTION, SOURCES, IONIZATION GAGES,  
SENSITIVITY

(U)

IDENTIFIERS: ELECTROCHEMICAL ENZYME ALARMS,  
ALAD(AUTOMATIC LIQUID AGENT DETECTORS),  
AUTOMATIC LIQUID AGENT DETECTORS

(U)

THIS REPORT GIVES A GENERAL DISCUSSION OF  
ATMOSPHERIC CONTAMINANTS FROM VARIOUS SOURCES  
(MILITARY OPERATIONS, URBAN AND INDUSTRIAL  
ACTIVITIES, AGRICULTURAL PRACTICES, AND PROCESSES  
OCCURRING IN NATURE). THE INFORMATION PRESENTED  
IS RELEVANT TO THE PERFORMANCE OF CHEMICAL-AGENT  
ALARMS BECAUSE ATMOSPHERIC CONTAMINANTS MAY EITHER  
GIVE A FALSE INDICATION OF THE PRESENCE OF AGENTS OR  
CAUSE A LOSS IN THE DETECTABILITY OF AGENTS. THERE  
ARE THREE TYPES OF ADVANCED POINT-SAMPLING ALARMS OF  
CURRENT INTEREST: THE IONIZATION DETECTOR, THE  
ELECTROCHEMICAL ENZYME ALARM, AND THE AUTOMATIC  
LIQUID AGENT DETECTOR (ALAD). THIS REPORT  
SUMMARIZES INFORMATION ON THE OPERATING PRINCIPLES OF  
THESE ALARM DEVICES AND THEIR SENSITIVITIES TO  
CHEMICAL AGENTS AND OTHER SUBSTANCES.

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A015 812 4/1

RADIATION RESEARCH ASSOCIATES INC FORT WORTH TEX

SKY RADIANCE CALCULATIONS IN THE 0.5 MICROMETER  
- 5.0 MICROMETER WAVELENGTH RANGE. (U)

DESCRIPTIVE NOTE: FINAL REPT. 1 FEB 74-30 APR 75,  
MAY 75 188P BLATTNER, WOLFRAM G. M. ;

WELLS, MICHAEL B. ;

REPT. NO. RRA-T7501

CONTRACT: F19628-74-C-0140

PROJ: DNA-NWED-AAXY

TASK: X966

MONITOR: AFCRL

TR-75-0317

UNCLASSIFIED REPORT

DESCRIPTORS: \*SKY BRIGHTNESS, \*AEROSOLS, \*AIR  
POLLUTION, ATMOSPHERIC SCATTERING, INFRARED SPECTRA,  
LIGHT TRANSMISSION, MATHEMATICAL MODELS,  
TABLES(DATA), ATMOSPHERE MODELS (U)

IDENTIFIERS: FLASH COMPUTER PROGRAM, ATMOSPHERIC  
ATTENUATION, \*ATMOSPHERIC EMISSION, RADIATIVE  
TRANSFER (U)

THE FLASH MONTE CARLO CODE WAS MODIFIED IN  
ORDER TO ALLOW FOR THE ATMOSPHERIC EMISSION AND FOR  
THE EMISSION BY THE SURFACE OF THE EARTH. THE  
MODIFICATION INCLUDES THE CONSIDERATION OF THE NEWEST  
ABSORPTION DATA AVAILABLE. THE FLASH PROGRAM WAS  
THEN USED FOR CALCULATIONS OF THE RADIANCES OBTAINED  
FOR AIR-BORNE DETECTORS AT 120, 200, AND 35,800 KM  
ALTITUDES. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY    SEARCH CONTROL NO.    00M07

AD-A015 898            4/2            2/4  
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER CHARLOTTESVILLE  
VA

DUST STORMS,

(U)

APR 75    230P            ZAKHAROV, P. S. ;  
REPT. NO.    FSTC-HT-23-0377-75

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:    TRANS. OF MONO. PYLNYE BURI,  
LENINGRAD, 1965 164P.

DESCRIPTORS:    \*DUST STORMS, PATTERNS, AGRICULTURE,  
METEOROLOGICAL PHENOMENA, TRANSPORTATION,  
DISTRIBUTION, WIND VELOCITY, PARTICLE SIZE,  
ECONOMICS, CONTROL, WINTER, SOIL EROSION,  
TRANSLATIONS, USSR

(U)

THE CAUSES AND CONDITIONS FOR FORMATION OF DUST  
STORMS, THE BASIC PATTERNS OF THEIR APPEARANCE AND  
THEIR EFFECTS ON AGRICULTURE, TRANSPORTATION,  
IRRIGATION SYSTEMS, ORCHARDS, ETC., ARE GIVEN.  
GEOGRAPHICAL DISTRIBUTION OF DUST STORMS AND WIND  
EROSION IN THE SOVIET UNION IS PRESENTED.  
SPECIFIC EXAMPLES, METHODS OF STUDY AND  
ORGANIZATIONAL-ECONOMIC, FOREST AMELIORATIVE AND  
AGRICULTURAL SCIENCE METHODS OF CONTROL OF DUST  
STORMS ARE DESCRIBED.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A016 760

7/4

MONSANTO RESEARCH CORP DAYTON OHIO DAYTON LAB

TRACE ANALYSIS FOR METALS IN AEROSPACE  
MATERIALS BY GAS CHROMATOGRAPHY.

(U)

DESCRIPTIVE NOTE: FINAL REPT. 1 FEB 72-1 JAN 75,  
JUN 75 91P ROSS, WILLIAM D. ; PARTS, LEO  
; BLACK, MARILYN S. ; WINNINGER, MARK T. ;  
REPT. NO. MRC-DA-441  
CONTRACT: F33615-72-C-1304  
PROJ: AF-7023  
TASK: 702304  
MONITOR: ARL 75-0189

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO REPORT DATED DEC 71, AD-  
739 865.

DESCRIPTORS: \*GAS CHROMATOGRAPHY, \*BERYLLIUM,  
\*CHROMIUM, CHROMATOGRAPHIC ANALYSIS, MICROWAVE  
EQUIPMENT, AIR FORCE OPERATIONS, INSTRUMENTATION,  
AIR POLLUTION, POLLUTANTS, SOILS, COAL,  
EXTRACTION, MONITORING, ASSESSMENT, SEPARATION,  
WAXES

(U)

IDENTIFIERS: \*AIR POLLUTION DETECTION, LUNAR  
STRUCTURES, DIKETONES, WHEAT PLANTS

(U)

CONTENTS: ANALYSIS FOR BERYLLIUM IN THE  
ENVIRONMENT BY GAS CHROMATOGRAPHY-(ANALYSIS FOR  
BERYLLIUM IN AMBIENT AIR PARTICULATES BY GAS  
CHROMATOGRAPHY, ANALYSIS FOR BERYLLIUM IN SOIL,  
COAL FLY ASH, COAL, AND WHEAT STRAW); ANALYSIS  
FOR CHROMIUM BY GAS CHROMATOGRAPHY, (ANALYSIS FOR  
CHROMIUM IN LUNAR MATERIAL BY GAS CHROMATOGRAPHY,  
CHROMIUM EXTRACTION STUDIES, ANALYSIS FOR  
CHROMIUM IN NBS COAL AND FLY ASH); AN ASSESSMENT  
OF INSTRUMENTATION AND MONITORING NEEDS FOR  
SIGNIFICANT POLLUTANTS EMITTED BY AIR FORCE  
OPERATIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH ON  
ANALYSIS OF POLLUTANTS; DEVELOPMENT AND EVALUATION  
OF AN ATMOSPHERIC PRESSURE MICROWAVE EXCITED EMISSION  
DETECTOR FOR GAS CHROMATOGRAPHY; EXTRACTION OF  
BETA-DIKETONES FROM WHEAT PLANT WAX-(EXTRACTION  
OF WAX FROM GREEN WHEAT STRAW, EVALUATION OF  
SEPARATION AND IDENTIFICATION TECHNIQUES, AND THE  
EXTRACTION OF COMPONENTS OF DRY WHEAT STRAW).

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A016 926 1974  
ARMY ARMAMENT COMMAND ROCK ISLAND ILL

OBSCURATION DUE TO DUST OF A LASER BEAM IN  
A GUN FIRING ENVIRONMENT - PRELIMINARY  
SURVEY REPORT. (U)

DESCRIPTIVE NOTE: TECHNICAL ENGINEERING REPT.,  
OCT 75 20P GOBLE, GERALD W. ;  
REPT. NO. AC-TR-75-003

UNCLASSIFIED REPORT

DESCRIPTORS: \*GUNFIRE, \*BLAST, \*LASER BEAMS,  
\*OBSCURATION, \*ATMOSPHERIC SCATTERING, DUST, MIE  
SCATTERING, MUZZLE BRAKES, PARTICLE SIZE,  
TANKS(COMBAT VEHICLES), AEROSOLS (U)

A REVIEW OF THE LITERATURE ADDRESSING THE PRESENT  
STATE-OF-THE-ART RESEARCH ON OBSCURATION DUE TO GUN  
BLAST IS PRESENTED. THE DYNAMICS OF THE DUST  
CLOUD, COMPOSITION OF THE DUST, THEORETICAL  
APPROACHES TO SCATTERING OF LASER ENERGY AND  
EXPERIMENTAL OBSCURATION MEASUREMENTS ARE DISCUSSED.  
PAPERS WITH SIGNIFICANT RESULTS ON OBSCURATION ARE  
PRESENTED, AND THE REQUIREMENTS FOR FURTHER STUDIES  
ARE OUTLINED. A BIBLIOGRAPHY ON RELATED GUN BLAST  
AND MUZZLE BRAKES STUDIES IS INCLUDED. (U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A016 946 7/4 14/2 15/2  
SOUTHERN RESEARCH INST BIRMINGHAM ALA

INTERFERENCE STUDIES FOR ADVANCED POINT  
SAMPLING ALARMS.

(U)

DESCRIPTIVE NOTE: QUARTERLY PROGRESS REPT. NO. 1, 28  
APR-28 JUL 75,

AUG 75 28P DICKSON, WALTER R. ; DISMUKES,  
EDWARD B. ; BARRETT, WILLIAM J. ;  
REPT. NO. SORI-3496-III  
CONTRACT: DAAA15-75-C-0126  
MONITOR: ED CR-76021

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO REPORT DATED AUG 75 ON  
PHASE I, REPORT ON CHEMICAL AGENT AND WARNING  
DEVICES.

DESCRIPTORS: \*TOXIC AGENT ALARMS, \*GAS DETECTORS,  
\*GAS IONIZATION, INTERFERENCE, AIR POLLUTION,  
CHEMICAL WARFARE AGENTS, ORGANIC COMPOUNDS,  
SENSITIVITY, PARTICLES, GB AGENT, SOURCES,  
VAPORS

(U)

IDENTIFIERS: \*AID (ARMY IONIZATION DETECTORS),  
ARMY IONIZATION DETECTORS

(U)

THIS REPORT COMMENTS BRIEFLY ON THE INITIAL WORK  
UNDER PHASE I, WHICH HAS BEEN COVERED IN DETAIL  
BY A SEPARATE FORMAL REPORT (EDGEWOOD ARSENAL  
CONTRACT REPORT ED-CR 76009). IT THEN  
DISCUSSES IN DETAIL THE PRELIMINARY EXPERIMENTAL WORK  
THAT HAS BEEN DONE IN PREPARATION FOR AND AS A PART  
OF PHASE II WITH THE ARMY IONIZATION  
DETECTOR (AID): DETERMINATION OF DETECTOR  
RESPONSES (1) IN LABORATORY EXPOSURES TO  
CONTROLLED CONCENTRATIONS OF GB, DIISOPROPYL  
METHYLPHOSPHONATE, N-HEXYL ALCOHOL, AND TRI(N-  
BUTYL)AMINE; (2) IN SNIFF TESTS OF  
APPROXIMATELY 35 ORGANIC COMPOUNDS; (3) IN SNIFF  
TESTS OF APPROXIMATELY 50 MATERIALS ASSOCIATED WITH  
HOUSEKEEPING PRACTICES AND HUMAN ACTIVITIES; AND  
(4) IN A VARIETY OF INDOOR AND OUTDOOR  
ENVIRONMENTS IN WHICH THERE WERE SOMETIMES NO  
IDENTIFIED SOURCES OF AIR CONTAMINANTS AND IN OTHERS  
OBVIOUS SOURCES OF CONTAMINATION SUCH AS LABORATORY  
ANIMALS, FLOWERING PLANTS, AUTOMOTIVE VEHICLES,  
INDUSTRIAL PLANTS, GARBAGE, AND SEWAGE.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A017 841 6/10 6/20 13/2  
NATIONAL NAVAL DENTAL CENTER BETHESDA MD

FACTORS AFFECTING AIRBORNE BERYLLIUM  
CONCENTRATIONS IN DENTAL SPACES,

(U)

75 12P HINMAN, R. W. ; LYNDE, T.  
A. ; PELLEU, G. B. , JR. ; GAUGLER, R. W. ;  
REPT. NO. NNDC-TR-030  
PROJ: MR041-20  
TASK: MR041-20-02

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN JNL. OF PROSTHETIC  
DENTISTRY, V33 N2 P210-215 FEB 75.

DESCRIPTORS: \*BERYLLIUM, \*AIR POLLUTION,  
DENTISTRY, VENTILATION, LATHES, TOXIC HAZARDS,  
OCCUPATIONAL DISEASES, INDUSTRIAL HYGIENE,  
SAMPLING, REPRINTS  
IDENTIFIERS: BERYLLIUM DISEASE

(U)  
(U)

NONPRECIOUS ALLOYS CONTAINING BERYLLIUM ARE  
CURRENTLY USED AS A SUBSTITUTE FOR GOLD IN THE  
FABRICATION OF FIXED AND REMOVABLE PROSTHODONTIC  
APPLIANCES. THE PURPOSE OF THIS STUDY WAS TO  
DETERMINE THE EFFECT OF VENTILATION AND ROOM SIZE ON  
THE CLEARANCE RATE OF AIRBORNE CONCENTRATIONS OF  
BERYLLIUM RESULTING FROM THE FINISHING OF REMOVABLE  
PARTIAL DENTURE FRAMEWORKS ON A HIGH SPEED LATHE.  
AIR SAMPLES WERE COLLECTED AND ASSAYED FOR  
BERYLLIUM CONTENT DURING, AND AT 10 AND 20 MINUTES  
AFTER, THE USE OF A CONDENSED FINISHING PROCEDURE ON  
A NONPRECIOUS ALLOY (TICONIUM, PREMIUM 100).  
TESTS FOR BERYLLIUM CONCENTRATIONS WERE MADE IN  
ROOMS WITH CAPACITIES OF 700 AND 10,000 CU FT, AT THE  
BREATHING ZONE, AND AT VARYING DISTANCES FROM THE  
OPERATOR. THE MATERIALS OF TWO TYPES OF FACE MASKS  
(ASEPTEX AND E-Z BREATHE) WERE ALSO TESTED  
FOR FILTERING EFFECTIVENESS. WITH LOCAL LATHE  
VENTILATION, BERYLLIUM WAS NOT FOUND IN EITHER ROOM.  
WITHOUT LOCAL LATHE VENTILATION IN THE TWO ROOMS,  
BERYLLIUM CONCENTRATIONS AT THE BREATHING ZONE WERE  
MORE THAN 10 TIMES HIGHER THAN THE FEDERAL SAFETY  
STANDARD OF 2.0 MICROGRAMS/CU M, AND ONLY SLIGHTLY  
LOWER THAN THE MAXIMUM SHORT-TIME EXPOSURE LEVEL OF  
25 MICROGRAMS/CU M. AT VARYING DISTANCES FROM THE  
BREATHING ZONE, SIGNIFICANT QUANTITIES OF BERYLLIUM  
COULD BE RECOVERED ONLY IN THE SMALLER ROOM.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A018 372 4/1  
EPSILON LABS INC BEDFORD MASS

BALLOON MEASUREMENTS OF STRATOSPHERIC AEROSOL  
SIZE DISTRIBUTION FOLLOWING A VOLCANIC DUST  
INCURSION.

(U)

DESCRIPTIVE NOTE: FINAL REPT. 1 OCT 74-31 AUG 75,  
AUG 75 57P MIRANDA, HENRY A. , JR. ;  
DULCHINOS, JOHN ;  
CONTRACT: F19628-75-C-0004  
PROJ: AF-7621  
TASK: 762112  
MONITOR: AFCRL TR-75-0518

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO REPORT DATED JUL 74, AD-  
784 866.

DESCRIPTORS: \*AEROSOLS, \*STRATOSPHERE, PARTICLE  
SIZE, VOLCANOES, DUST, COSMIC RAYS, BALLOON  
EQUIPMENT, SPECTRUM ANALYSIS, COMPUTER PROGRAMS,  
NEW MEXICO, FORTRAN  
IDENTIFIERS: DATRUN COMPUTER PROGRAM

(U)  
(U)

STRATOSPHERIC AEROSOL SIZE DISTRIBUTION  
MEASUREMENTS OF THE VOLCANIC DUST LAYER OVER  
SOUTHEASTERN NEW MEXICO, OBTAINED ON A BALLOON  
FLIGHT ON JANUARY 21/22, 1975 SEVERAL MONTHS  
FOLLOWING THE FUEGO VOLCANIC ERUPTION, ARE  
PRESENTED AND DISCUSSED IN PRELIMINARY FASHION.  
ALTITUDE PROFILES OF ALL PARTICLES BROKEN DOWN INTO  
A SET OF CONTIGUOUS SIZE RANGES INDICATE THE  
PRESENCE OF A PRONOUNCED CONCENTRATION PEAK IN THE  
16-21 KM REGION. ABOVE THIS LAYER A DISTINCT  
PLATEAU IS SEEN TO EXIST BETWEEN 22 AND 26 KM WHICH  
APPEARS TO BE ABSENT AT NIGHT. THIS SUGGESTS THE  
POSSIBILITY OF SUNLIGHT NUCLEATION EFFECTS OCCURRING  
IN THIS ALTITUDE REGIME. A SUNRISE NUCLEATION  
EXPERIMENT CONDUCTED ABOVE THIS PLATEAU REGION AT 28  
KM SHOWS NO EVIDENCE OF NUCLEATION DURING THE FIRST  
1/2 HOUR FOLLOWING LOCAL SUNRISE. A DISTINCT  
ALTITUDE-DEPENDENT SIZE DISTRIBUTION SLOPE IN THE 23-  
27 KM REGION WHICH HAD BEEN OBSERVED ON A SERIES OF  
PREVIOUS FLIGHT IN MAY OF 1973, APPEARS TO HAVE  
BEEN SHIFTED TO HIGHER ALTITUDES (26-28 KM) AND  
IS SOMEWHAT LESS PRONOUNCED.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A019 094 21/2 7/4  
GENERAL ELECTRIC CO CINCINNATI OHIO AIRCRAFT ENGINE  
GROUP

DEVELOPMENT OF EMISSIONS MEASUREMENT  
TECHNIQUES FOR AFTERBURNING TURBINE ENGINES. (U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT. 1 APR 73-31  
MAR 75,

OCT 75 348P LYON, T. F. ; COLLEY, W. C.  
; KENWORTHY, M. J. ; BAHR, D. W. ;  
REPT. NO. R75-AEG457  
CONTRACT: F33615-73-C-2047  
PROJ: AF-1900  
MONITOR: AFAPL TR-75-52

UNCLASSIFIED REPORT

DESCRIPTORS: \*JET ENGINES, \*AIRCRAFT ENGINES,  
\*EXHAUST GASES, \*AFTERBURNERS, \*AIR POLLUTION,  
SAMPLING, MEASUREMENT, MATHEMATICAL MODELS,  
CONCENTRATION (COMPOSITION), CARBON MONOXIDE,  
HYDROCARBONS, FLOW RATE, NITROGEN OXIDES,  
PROBES, REACTION KINETICS, PLUMES, COMBUSTION (U)  
IDENTIFIERS: J85-5 ENGINES, J79-15 ENGINES, \*GAS  
SAMPLING (U)

DETAILED EMISSIONS MEASUREMENTS WERE MADE  
THROUGHOUT THE PLUMES OF J85-5 AND J79-15 ENGINES  
AT MILITARY POWER AND THREE AFTERBURNING POWER  
LEVELS. CALCULATIONS OF INTEGRATED POLLUTANT FLOW  
RATES AT VARIOUS AXIAL STATIONS SHOWED THAT  
HYDROCARBONS ARE MOST REACTIVE IN THE PLUME, WITH  
SIGNIFICANT DECREASES OBSERVED AT ALL AFTERBURNING  
POWER LEVELS. CARBON MONOXIDE CAN EITHER INCREASE  
OR DECREASE WITH AXIAL DISTANCE IN THE PLUME,  
DEPENDING ON THE POWER LEVEL AND THE HYDROCARBON  
CONTENTS. NO SIGNIFICANT CHANGE IN TOTAL OXIDES OF  
NITROGEN WAS OBSERVED AT ANY POWER LEVEL. A  
COMPUTERIZED ANALYTICAL PLUME MODEL WAS DEVELOPED AND  
VERIFIED, WHICH CONSIDERS THE SIMULTANEOUS MIXING AND  
CHEMICAL REACTION PROCESSES THAT CAN OCCUR IN THE  
PLUMES OF AFTERBURNING ENGINES. THE MODEL ENABLES  
CALCULATING LOCAL CONCENTRATIONS OF THE VARIOUS  
EXHAUST GASES AT ANY AXIAL OR RADIAL LOCATION FROM  
INITIAL VALUES MEASURED AT THE EXHAUST PLANE. A  
PROCEDURE FOR AFTERBURNING ENGINE EMISSIONS  
MEASUREMENTS WAS DEVELOPED. (U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A019 501 4/1

COLORADO UNIV BOULDER DEPT OF ASTRO-GEOPHYSICS

THE GLOBAL DISTRIBUTION AND VARIATIONS OF  
ATMOSPHERIC OZONE.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,

JUL 75 22P LONDON, JULIUS ;

CONTRACT: DOT-AS-20091

MONITOR: DOT/TST 76-12

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SPONSORED IN PART BY NATIONAL  
SCIENCE FOUNDATION, WASHINGTON, D.C.

DESCRIPTORS: \*STRATOSPHERE, \*OZONE, \*AIR  
POLLUTION, ATMOSPHERIC CHEMISTRY, PHOTOCHEMICAL  
REACTIONS, CHEMICAL REACTIONS, SOLAR ULTRAVIOLET  
RADIATION, ATMOSPHERIC CIRCULATION, GLOBAL

(U)

IDENTIFIERS: CLIMATOLOGY,  
CONCENTRATION(COMPOSITION), DOT/5C

(U)

DURING THE PAST THREE YEARS THERE HAS BEEN A  
NATIONAL AND INTERNATIONAL INTENSIFICATION OF  
RESEARCH PROGRAMS TO STUDY THE PHOTOCHEMICAL  
PRODUCTION AND DESTRUCTION OF ATMOSPHERIC OZONE AND  
ITS VARIATIONS IN A DYNAMIC ATMOSPHERE. THIS  
INTENSIFIED EFFORT IS IN RESPONSE TO THE REALIZATION  
THAT OZONE, AS A HIGHLY REACTANT GAS, CAN BE INVOLVED  
IN A LARGE NUMBER OF CHEMICAL INTERACTIONS WITH  
STRATOSPHERIC TRACE SUBSTANCES (BOTH 'NATURAL' AND  
'ARTIFICIALLY PRODUCED') TO SIGNIFICANTLY VARY ITS  
CONCENTRATION IN THE STRATOSPHERE. SOME IMPORTANT  
POSSIBLE CONSEQUENCES OF SUCH INTERACTION WOULD BE:  
(A) CHANGES IN SOLAR ULTRAVIOLET RADIATION  
RECEIVED AT THE GROUND WITH SERIOUS BIOSPHERIC  
EFFECTS; (B) CHANGES IN THE THERMAL AND DYNAMIC  
STRUCTURE OF THE STRATOSPHERE WITH POTENTIAL CLIMATIC  
IMPLICATIONS. TWO ASPECTS OF THE SO-CALLED 'OZONE  
PROBLEM' HAVE BEEN STUDIED: (1) THE ANALYSIS  
OF THE GLOBAL DISTRIBUTION AND VARIATIONS OF TOTAL  
OZONE; (2) PHOTOCHEMISTRY OF STRATOSPHERIC OZONE  
AND ITS INTERACTION WITH ATMOSPHERIC CIRCULATION.  
THIS REPORT DESCRIBES THE RESULTS OF THESE STUDIES. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A019 583 4/1 7/4 14/2  
MISSOURI UNIV ROLLA GRADUATE CENTER FOR CLOUD PHYSICS  
RESEARCH

AIRCRAFT MEASUREMENTS OF AITKEN NUCLEI IN THE  
LOWER STRATOSPHERE. (U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT.,  
APR 75 54P PODZIMEK, JOSEF ; SEDLACEK, W.  
A. ; HABERL, J. B. ;  
REPT. NO. AG-2  
CONTRACT: N00014-75-C-0413, DOT-AS-20023  
MONITOR: DOT/TST 75-129

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH LOS  
ALAMOS SCIENTIFIC LAB., N. MEX. AND GENERAL  
ELECTRIC CO., PITTSFIELD, MASS.

DESCRIPTORS: \*STRATOSPHERE, \*AEROSOLS, \*AIR  
POLLUTION, EXHAUST GASES, NEW MEXICO, TEXAS,  
MEASUREMENT, AIRBORNE, PARTICLES,  
CONCENTRATION (COMPOSITION), NUCLEI, SAMPLING,  
MONITORING, CALIBRATION, PARTICLE SIZE, LIGHT  
SCATTERING, ELECTROSTATIC PRECIPITATION, CHARGED  
PARTICLES, MOUNTAINS (U)  
IDENTIFIERS: \*AIRBORNE WASTES, \*AIR POLLUTION  
SAMPLING, AITKEN NUCLEI (U)

THE PURPOSE OF THIS ARTICLE IS TO EVALUATE THE  
FIRST AN MEASUREMENTS USING THE NEW GE AN  
COUNTER IN STRATOSPHERIC CONDITIONS. THE  
INSTRUMENT BRIEFLY DESCRIBED IN THIS ARTICLE WAS  
FLOWN ON A WB-57F AIRCRAFT IN 1974 UP TO AN  
ALTITUDE OF 20 KM. THE VERTICAL PROFILES OF AN  
CONCENTRATIONS, MEASURED MAINLY OVER NEW MEXICO  
AND TEXAS, SHOWED AN COUNTS COMPARABLE WITH THE  
PREVIOUS BALLOON MEASUREMENTS IN THE TROPOPAUSE  
(SEVERAL HUNDRED TO 1,000 N/CC). HOWEVER, IN  
ALTITUDES ABOVE 13 KM, THE MEASURED AN  
CONCENTRATIONS WERE HIGHER BY ONE ORDER OF MAGNITUDE  
(30 N/CC) THAN THE OLDER DATA OF JUNGE ET. AL.  
(1961). THE FLIGHTS OVER THE ROCKY  
MOUNTAINS AND OVER TEXAS INDICATE A POTENTIALLY  
STRONG INFLUENCE THAT MOUNTAINOUS AREAS HAVE ON AN  
COUNTS IN THE LOWER STRATOSPHERE. THE MEASUREMENTS  
ALSO SHOWED THE POLLUTION OF THE LOWER STRATOSPHERE  
CAUSED BY AIRCRAFT EMISSIONS IN THE TROPOPAUSE. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A020 172 13/2 13/10  
GENERAL ELECTRIC CO PHILADELPHIA PA RE-ENTRY AND  
ENVIRONMENTAL SYSTEMS DIV

A STUDY OF THE EFFECTS OF DETERGENTS ON  
TYPICAL BILGE WATERS AND CORRELATION OF OIL  
PARTICLE SIZES.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
JUL 75 222P BATUTIS, E. ; HOGUE, H. ;  
MCGINN, J. ;  
CONTRACT: DOT-CG-43287  
PROJ: CG-4305.3/3  
MONITOR: USCG D-177-75

UNCLASSIFIED REPORT

DESCRIPTORS: \*OIL POLLUTION, \*BILGES, \*SEPARATORS,  
\*SURFACE ACTIVE SUBSTANCES, WATER TREATMENT,  
CONCENTRATION(CHEMISTRY), OILS, CATIONS,  
ANIONS, DETERGENTS, PARTICLE SIZE, TEMPERATURE,  
PH FACTOR, SALINITY, WATER, POLYMERS, REMOVAL,  
STATISTICAL ANALYSIS, CLEANING COMPOUNDS,  
MONITORS, STATISTICAL DATA, PARTICLE COUNTERS,  
DROPS, WATER POLLUTION, POLLUTION ABATEMENT,  
EMULSIONS, WASTES, COAST GUARD  
IDENTIFIERS: NONIONIC DETERGENTS, DOT/5C

(U)

(U)

OIL REMOVAL SYSTEMS FOR TREATING BILGE WATER ARE  
DRASTICALLY AFFECTED BY THE CONDITION, COMPOSITION,  
AND CHARACTER OF THE INCOMING BILGE WATER-OIL  
MIXTURE. THE PRESENCE OF VARIOUS DETERGENTS AND  
CLEANSERS CAUSES EMULSIFICATION OF HYDROCARBON  
PRODUCTS ALREADY PRESENT. THE EXTENT OF  
EMULSIFICATION CAUSED BY SYNTHETIC DETERGENTS ON  
EIGHT OILS WAS STUDIED AT A FIXED AGITATION RATE AND  
INTENSITY AS A FUNCTION OF DETERGENT TYPE  
(CATIONIC, ANIONIC, OR NON-IONIC) AND  
CONCENTRATION AS WELL AS TEMPERATURE, PH AND  
SALINITY OF THE CONTINUOUS (EXTERNAL) PHASE  
(DISTILLED WATER). LABORATORY TEST EMULSIONS  
WERE GENERATED USING ULTRASONIC AGITATION, COUPLED  
WITH HIGH SPEED NON-AERATING DISPERSION TO SIMULATE  
THE TYPE OF EMULSIONS PRODUCED BY ACTION OF A  
CENTRIFUGAL PUMP. A HIAC PARTICLE COUNTER WAS  
USED TO DETERMINE THE AMOUNT OF OIL EMULSIFIED.  
THE CONCLUSIONS INDICATED THAT: (1)  
DETERGENTS WITH CATIONIC-ACTIVE INGREDIENTS WOULD  
PROMOTE A HIGHER DEGREE OF EMULSIFICATION THAN THOSE  
WITH NON-IONIC OR ANIONIC TYPE SURFACTANTS.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A021 948 14/2 7/1 7/4 21/4  
EDGEWOOD ARSENAL ABERDEEN PROVING GROUND MD

PROCEEDINGS OF THE ANNUAL SYMPOSIUM 'TRACE  
ANALYSIS AND DETECTION IN THE ENVIRONMENT'  
(6TH) HELD AT EDGEWOOD ARSENAL ON 29  
APRIL-1 MAY 1975 AND SPONSORED BY THE  
AMERICAN DEFENSE PREPAREDNESS  
ASSOCIATION.

(U)

DESCRIPTIVE NOTE: SPECIAL PUB.,  
JAN 76 318P BROWN, JOHN A. ;  
REPT. NO. EO-SP-76001

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO REPORT DATED JAN 75, AD-  
A007 799.

DESCRIPTORS: \*CHEMICAL ANALYSIS, \*GAS ANALYSIS,  
\*MEETINGS, \*TRACE GASES, \*TRACE ELEMENTS,  
\*SAMPLING, CONCENTRATION(CHEMISTRY), AIR  
POLLUTION, CRYOGENICS, CALIFORNIA, SMOG,  
LABORATORY EQUIPMENT, COMBUSTION PRODUCTS,  
PARTICLES, INFRARED SPECTROSCOPY, ABSORPTION  
SPECTRA, ATMOSPHERIC CHEMISTRY, FIELD TESTS, GAS  
CHROMATOGRAPHY, RAMAN SPECTROSCOPY, VINYL PLASTICS,  
CHEMILUMINESCENCE, WATER POLLUTION, MICROSCOPY,  
NARCOTICS, MARIJUANA, MONITORING, OPIUM  
ALKALOIDS, PLASMAS(PHYSICS), EXPLOSIVES,  
EFFLUENTS, FLY ASH, CHEMICAL AGENT DETECTORS,  
PLUMES, INDUSTRIAL HYGIENE, LIQUID CRYSTALS,  
EMISSION SPECTRA, POLAROGRAPHY, DYES,  
PHOTOELECTRIC EFFECT, MERCURY

(U)

IDENTIFIERS: AIR POLLUTION DETECTION, AIR  
POLLUTION SAMPLING, LASER SPECTROSCOPY, JP-4  
FUELS, GLASS SAMPLING METHOD, GLASS FILTERS,  
VINYL CHLORIDE, WATER POLLUTION SAMPLING,  
CONTINUOUS AQUEOUS MONITORS, EXHAUST EMISSIONS,  
ISOTOPIC LABELING

(U)

PAPERS ON CONCENTRATION, DETECTION AND SAMPLING OF  
TRACE GASES IN THE AIR WERE GIVEN. TECHNIQUES  
USING CRYOGENIC SAMPLING, INFRARED SPECTROSCOPY,  
ISOTOPE-ZEEMAN ATOMIC ABSORPTION MERCURY  
DETECTOR, MULTIPASS RAMAN INSTRUMENT,  
ULTRAMICROSCOPY, PLASMA CHROMATOGRAPHY,  
ULTRASENSITIVE FLAME PHOTOMETER, DATA-A PATTERN  
RECOGNITION, ISOTOPE DILUTION ENZYMATIC SYSTEMS,  
CHEMICAL AGENT DECISION TECHNOLOGY, LIQUID CRYSTAL  
TECHNOLOGY, MICROWAVE, EMISSION SPECTROSCOPY,  
POLAROGRAPHY AND OTHER METHODS ARE DESCRIBED.

(U)

254

UNCLASSIFIED

00M07



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A022 671 13/2 21/9.2 21/8.2  
NAVAL WEAPONS CENTER CHINA LAKE CALIF

ENVIRONMENTAL STUDY OF TOXIC EXHAUSTS.

(U)

DESCRIPTIVE NOTE: FINAL REPT. FEB 73-SEP 74,  
FEB 76 104P NADLER, MELVIN P. ;  
PROJ: AF-5730  
TASK: 573073  
MONITOR: AFRPL TR-76-13

UNCLASSIFIED REPORT

DESCRIPTORS: \*AIR POLLUTION, \*SOLID PROPELLANT  
ROCKET ENGINES, \*ROCKET EXHAUST, ROCKET LAUNCHING,  
ADSORPTION, CARBON MONOXIDE, AFTERBURNERS,  
HYDROGEN CHLORIDE, ALUMINUM COMPOUNDS, ISOTHERMS,  
CHEMICAL AGENT DETECTORS, EXHAUST PLUMES, NITROGEN  
OXIDES, AEROSOLS, METEOROLOGICAL DATA, WASTE  
MANAGEMENT, OXIDES, CONCENTRATION(CHEMISTRY),  
LAUNCH VEHICLES, ROCKET EXHAUST  
IDENTIFIERS: TITAN

(U)

(U)

SOME ASPECTS OF THE ENVIRONMENTAL HAZARD OF LARGE  
SOLID ROCKET MOTORS HAVE BEEN INVESTIGATED.  
ADSORPTION EXPERIMENTS OF HCL(G) AND  
CO(G) ONTO AL2O3 WERE PERFORMED. THE  
AFTERBURNING OF CO TO CO2 WAS FOUND TO BE 99%  
COMPLETE. THE GROUND CLOUD PRODUCED DURING A  
TITAN LAUNCH WOULD CONTAIN 9 PPM CO INITIALLY AND  
50-82 PPM CO IF THE TOTAL BURN OCCURRED ON THE PAD.  
HYDROGEN CHLORIDE AND NITRIC OXIDE MEASUREMENTS  
WERE MADE IN THE GROUND CLOUDS PRODUCED FROM SMALL  
SOLID ROCKET MOTORS. EXPERIMENTS INDICATED THAT  
LOWER THAN THERMODYNAMICALLY PREDICTED NO  
CONCENTRATIONS EXIST IN THE GROUND CLOUD. THE HCL  
DOSAGES MEASURED SHOW THE HCL IN THE INITIAL GROUND  
CLOUD TO BE APPROXIMATELY THAT PREDICTED  
THERMODYNAMICALLY. THE INITIAL GROUND CLOUD IS NON-  
HOMOGENEOUS IN HCL AND NO, AND HCL(G) WAS  
FOUND OUTSIDE THE VISIBLE CLOUD. EXPERIMENTS WERE  
ALSO PERFORMED COMPARING FIVE DIFFERENT HCL  
DETECTORS UNDER FIELD CONDITIONS. THE INSTRUMENT  
COMPARISON SHOWED THAT LITTLE HCL AEROSOL EXISTS IN  
THE TURBULENT GROUND CLOUD FOR RELATIVE HUMIDITIES  
LESS THAN 30%. ALSO, THE HCL TIED TO PARTICLES  
IS MUCH HIGHER THAN WHAT WOULD BE PREDICTED FROM  
LABORATORY EXPERIMENTS.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A022 844 9/3 6/10  
CONSTRUCTION ENGINEERING RESEARCH LAB (ARMY) CHAMPAIGN  
ILL

FUME EMISSIONS FROM COAL-TAR PITCH. (U)

DESCRIPTIVE NOTE: TECHNICAL MANUSCRIPT,  
JAN 76 109P HITTLE, DOUGLAS C. ; STUKEL,  
JAMES J. ;  
REPT. NO. CERL-TECHNICAL-MS-E-84

UNCLASSIFIED REPORT

DESCRIPTORS: \*COAL TAR, \*FUMES, \*OCCUPATIONAL  
DISEASES, ROOFS, PARTICLE SIZE, SPATIAL  
DISTRIBUTION, CONCENTRATION(CHEMISTRY),  
TOXICITY, PITCH(MATERIAL), GAS CHROMATOGRAPHY,  
FLOW RATE, CHEMICAL COMPOSITION, TIME,  
TEMPERATURE, CHEMICAL ANALYSIS, AIR POLLUTION,  
MATHEMATICAL MODELS, HEAT TRANSFER, PHYSICAL  
PROPERTIES, CHEMICAL PROPERTIES (U)

THIS STUDY WAS INTENDED TO CHARACTERIZE THE  
CHEMICAL AND PHYSICAL NATURE OF COAL-TAR FUMES  
EMITTED FROM SPREADING APPLICATIONS OF COAL TAR AND  
TO DETERMINE A FIRST ESTIMATE OF THE EMISSION FACTOR  
FOR COAL-TAR FUMES UNDER CONDITIONS SIMILAR TO THOSE  
FOUND IN THE FIELD. THREE SEPARATE EXPERIMENTS WERE  
PERFORMED. THE FIRST RESULTED IN THE DETERMINATION  
OF A COAL-TAR FUME PARTICLE SIZE DISTRIBUTION. THE  
SECOND EXPERIMENT RESULTED IN THE IDENTIFICATION OF  
THE PRIMARY COMPOUNDS FOUND IN COLLECTED TAR FUMES  
AND A DETERMINATION OF THEIR RELATIVE CONCENTRATION.  
THE THIRD RESULTED IN AN ESTIMATE OF COAL-TAR FUME  
EMISSION RATES UNDER VARIOUS AIR FLOW CONDITIONS.  
THESE RESULTS MAY PERMIT DETERMINATION OF THE  
POTENTIAL HAZARDS TO WORKERS HEALTH AND AIR QUALITY  
ASSOCIATED WITH COAL-TAR-PITCH PRODUCTS.  
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A023 085 21/9.2 6/10 13/2  
JOHNS HOPKINS UNIV LAUREL MD CHEMICAL PROPULSION  
INFORMATION AGENCY

HYDROGEN CHLORIDE DETECTION, MEASUREMENT AND  
MONITORING,

(U)

DEC 75 42P GAARDER, D. S. ; JENSEN, A.  
V. ;  
REPT. NO. CPIA-PUB-272  
CONTRACT: N00017-72-C-4401

UNCLASSIFIED REPORT

AVAILABILITY: PAPER COPY AVAILABLE FROM CHEMICAL  
PROPULSION INFORMATION AGENCY, LAUREL, MD.  
20810.

DESCRIPTORS: \*SOLID ROCKET OXIDIZERS, \*OCCUPATIONAL  
DISEASES, \*HYDROGEN CHLORIDE, COMBUSTION,  
MONITORING, AIR POLLUTION, MEASUREMENT, AMMONIUM  
PERCHLORATE, TOXICITY, ENVIRONMENTS, TEST METHODS,  
STANDARDS, ROCKET LAUNCHING, CHEMICAL INDICATORS,  
CHEMICAL AGENT DETECTORS, TOXIC HAZARDS, SOLID  
ROCKET PROPELLANTS, COMBUSTION CHAMBER GASES  
IDENTIFIERS: \*AIR POLLUTION DETECTION, \*AIR  
POLLUTION SAMPLING

(U)

(U)

RESULTS ARE PRESENTED OF A COMPREHENSIVE SURVEY OF  
METHODS FOR DETECTING, MEASURING AND MONITORING  
HYDROGEN CHLORIDE RESULTING FROM COMBUSTION OF  
PROPELLANTS CONTAINING AMMONIUM PERCHLORATE.  
TECHNIQUES FOR SAMPLING AND ANALYSES, COMMERCIALY  
AVAILABLE INSTRUMENTS, AND INSTRUMENT TECHNIQUES  
UNDER DEVELOPMENT ARE DESCRIBED. THE SURVEY IS  
INTENDED TO PROVIDE INFORMATION WHICH WILL ALLOW  
SELECTION OF THE OPTIMUM MEASUREMENT TECHNIQUE FOR A  
GIVEN APPLICATION. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A023 235 13/2  
PURDUE UNIV LAFAYETTE IND DEPT OF CHEMISTRY

PATTERN RECOGNITION AND FACTOR ANALYSIS  
APPLIED TO CHARACTERIZATION OF PARTICULATE  
COMPOSITION FROM SOUTHWESTERN DESERT  
ATMOSPHERE.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,  
MAR 76 31P GAARENSTROOM, P. D. ; PERONE,  
S. P. ; MOYERS, J. L. ;  
REPT. NO. TR-8  
CONTRACT: N00014-75-C-0874, NSF-MPS74-12762  
PROJ: NR-051-552

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH ARIZONA  
UNIV., TUCSON. UNIV. ANALYTICAL CENTER.

DESCRIPTORS: \*PARTICLES, STATISTICAL ANALYSIS,  
FACTOR ANALYSIS, AIR POLLUTION, AEROSOLS,  
STANDARD DEVIATION, URBAN AREAS, DESERTS,  
MONITORING

(U)

IDENTIFIERS: \*AIR POLLUTION DETECTION, \*TRACE  
ELEMENTS

(U)

MEASUREMENTS MADE OF THE COMPOSITION OF ATMOSPHERIC  
PARTICULATES COLLECTED IN THE GREATER TUCSON,  
ARIZONA, AREA HAVE BEEN EXAMINED USING PATTERN  
RECOGNITION AND FACTOR ANALYSIS. CLUSTER ANALYSIS  
SHOWED SI, TI, CS, LI, RB, AL, K, FE,  
CA, MG, NA, MN, SR, CO, AND CR TO BE  
PRIMARILY OF SOIL ORIGIN. FACTOR ANALYSIS SEPARATED  
THE VARIANCE OF THE DATA BASE INTO A SMALL NUMBER OF  
FACTORS WHICH CAN REPRODUCE THE CORRELATION MATRIX  
AND CAN IDENTIFY OTHER SOURCES OF PARTICULATES. THE  
SOURCE OF NH<sub>4</sub>(+) AND SO<sub>4</sub>(2-) IS EXTERNAL TO  
THE TUCSON AREA. THE REMAINING SPECIES--NO<sub>3</sub>(-),  
Zn, Pb, Cu, Ni, AND Cd--HAVE SEVERAL  
SOURCES. RELATIVE TO A REMOTE DESERT LOCATION, Pb  
IN THE URBAN PARTICULATES IS OF THE GREATEST  
ENRICHMENT, FOLLOWED BY THE ELEMENTS OF A CRUSTAL  
ORIGIN.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A024 661 13/2 21/4 21/2  
ENVIRONMENTAL HEALTH LAB MCCLELLAN AFB CALIF

A BIOENVIRONMENTAL STUDY OF EMISSIONS FROM  
REFUSE DERIVED FUEL.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
JAN 76 113P JACKSON, JERRY W. ;  
REPT. NO. EHL-M-76M-2  
PROJ: EHL-M-AAF-520

UNCLASSIFIED REPORT

DESCRIPTORS: \*SOLID WASTES, \*FUELS, \*COMBUSTION  
PRODUCTS, \*EMISSION, SMOKE STACKS, FURNACES,  
COAL, MIXTURES, RATIOS, AIR POLLUTION, AIR  
QUALITY, POLLUTION ABATEMENT, CHEMICAL COMPOSITION,  
SULFUR, DIOXIDES, NITROGEN OXIDES, HYDROCARBONS,  
CHLORIDES, FLUORIDES, LEAD(METAL), PARTICLE  
SIZE, EFFLUENTS

(U)

IDENTIFIERS: REFUSE DERIVED FUELS, AIR POLLUTION  
SAMPLING, SOLID WASTE DISPOSAL

(U)

REFUSE DERIVED FUEL (PROCESSED MUNICIPAL SOLID  
WASTE) WAS USED AS A SUPPLEMENT TO COAL IN A  
UTILITY BOILER (80,000 LBS. STEAM PER HOUR).  
FURNANCE EMISSIONS WERE DETERMINED FROM COAL, AND  
FROM 1:1 AND 2:1 MIXES (BY VOLUME) OF REFUSE  
DERIVED FUEL (RDF) AND COAL RESPECTIVELY. IN  
COMPARISON WITH COAL, THE 1:1 MIX HAD SIGNIFICANTLY  
LOWER SULFUR DIOXIDE, HYDROCARBON AND NITROGEN OXIDE  
EMISSION LEVELS. PARTICULATE EMISSIONS WERE  
UNCHANGED. LEAD, CHLORIDE AND FLUORIDE EMISSIONS  
WERE SIGNIFICANTLY INCREASED. THE 2:1 MIX HAD  
LOWER SO<sub>2</sub> AND HC EMISSION LEVELS BUT HIGHER  
NITROGEN OXIDE EMISSIONS AND ERRATIC PARTICULATE  
EMISSIONS. LEAD, CHLORIDE AND FLUORIDE EMISSIONS  
WERE SIGNIFICANTLY INCREASED. OPERATORS HAD  
DIFFICULTY CONTROLLING FURNANCE TEMPERATURE, FUEL  
DISTRIBUTION AND FUEL: AIR RATIOS DURING USE OF  
THE 2:1 MIX. EXCEPT FOR INCREASED LEAD EMISSIONS,  
THE USE OF RDF IN A 1:1 MIX WITH COAL WAS  
FAVORABLY INDICATED. THE INCREASED EMISSION OF LEAD  
CREATES A COMPLEX ENVIRONMENTAL QUESTION. NO  
FEDERAL EMISSION OR AIR QUALITY STANDARD FOR LEAD  
HAS BEEN PROMULGATED AND SCIENTIFIC CONTROVERSY  
EXISTS AS TO AN 'ACCEPTED' LEVEL FOR AIRBORNE LEAD.  
THE EPA HAS NOT PROPOSED ANY STANDARDS, BUT HAS  
ISSUED AN OPINION CALLING FOR THE REDUCTION OF LEAD  
WHENEVER POSSIBLE.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A025 258 11/2 17/9  
SOLAR SAN DIEGO CALIF

STUDY OF EROSION MECHANISMS OF ENGINEERING  
CERAMICS.

(U)

DESCRIPTIVE NOTE: INTERIM TECHNICAL REPT. NO. 4, 1 APR-  
31 DEC 75,  
APR 76 69P GULDEN, MARY E. ; METCALFE,  
ARTHUR G. ;  
REPT. NO. RDR-1778-4  
CONTRACT: N00014-73-C-0401  
PROJ: NR-032-542

UNCLASSIFIED REPORT

DESCRIPTORS: \*CERAMIC MATERIALS, \*ALUMINA,  
\*EROSION, RADOMES, QUARTZ, PARTICLES, PARTICLE  
SIZE, ELECTRON MICROSCOPY, ENVIRONMENTAL TESTS,  
WEIGHT

(U)

IDENTIFIERS: ALSIMAG 614 RADOME MATERIAL, ALSIMAG  
614, GLASS PARTICLE COMPOSITES, ALUMINUM OXIDE  
MATRIX COMPOSITES

(U)

A GLASS BONDED ALUMINA RADOME MATERIAL (ALSIMAG 614) WAS ERODED UNDER CONDITIONS WHICH SIMULATE A SERVICE ENVIRONMENT. NATURAL OCCURRING QUARTZ IN THREE PARTICLE SIZE RANGES (1-30 MICROMETERS, 75-149 MICROMETERS AND 203-297 MICROMETERS) ACCELERATED TO VELOCITIES RANGING FROM 30 TO 313 M/SEC. WAS USED FOR THE EROSIVE MEDIA. THE WEIGHT LOSS THRESHOLD FOR MEGA PARTICLE IMPACTS WAS DETERMINED FOR THE THREE PARTICLE SIZE RANGES. ALTHOUGH THE THRESHOLD PARTICLE KINETIC ENERGY VARIED OVER 2 1/2 ORDERS OF MAGNITUDE, IT WAS FOUND THAT THE THRESHOLD ENERGY DENSITY WAS CONSTANT. STRENGTH MEASUREMENTS BEFORE AND AFTER EROSION REVEALED THAT A SIGNIFICANT STRENGTH DECREASE DID NOT OCCUR UNDER THESE CONDITIONS FOR MATERIAL REMOVAL UP TO A DEPTH OF 50 MICRONS. AN ELECTRON MICROSCOPY EXAMINATION OF SURFACES AFTER BOTH SINGLE PARTICLE IMPACT AND MEGA PARTICLE IMPACT WAS PERFORMED. OBSERVATION REVEALED THAT THE TWO PHASE NATURE OF THE TARGET AFFECTS EROSION RESPONSE TO SUCH A DEGREE THAT THE MODELS DEVELOPED FOR EROSION OF ISOTROPIC, ELASTIC SURFACES ARE NOT APPLICABLE. THE APPEARANCE OF THE SURFACES INDICATED THAT FLOW OF THE GLASSY GRAIN BOUNDARY PHASE OCCURRED. SIMPLIFIED CALCULATIONS BASED ON SUPERIMPOSED HYDROSTATIC COMPRESSION INDICATE THAT PLASTIC FLOW OF THE GLASS IS POSSIBLE UNDER THESE EROSION TEST CONDITIONS.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A025 636 13/2  
ROCKWELL INTERNATIONAL THOUSAND OAKS CALIF SCIENCE  
CENTER

ELECTROCHEMICAL MONITORING OF ATMOSPHERIC  
CORROSION PHENOMENA,

(U)

JUL 75 13P MANSFELD ,F. ;KENKEL,J. V.

;  
CONTRACT: N00014-75-C-0788  
PROJ: NR-036-108

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN CORROSION SCIENCE, V16  
P111-122 1976.

DESCRIPTORS: \*ATMOSPHERIC CORROSION, \*MONITORS,  
COPPER, ZINC, ELECTROCHEMISTRY, STEEL, SALTS,  
HUMIDITY, AIR, CHEMICAL COMPOSITION,  
EXPOSURE(GENERAL), AIR POLLUTION, REPRINTS  
IDENTIFIERS: AIR POLLUTION  
EFFECTS(MATERIALS)

(U)

(U)

AN ATMOSPHERIC CORROSION MONITOR (ACM) WHICH  
CONSISTS OF CU/ZN OR CU/STEEL COUPLES, HAS BEEN  
USED TO STUDY VARIOUS ASPECTS OF ATMOSPHERIC  
CORROSION. CALIBRATION OF ACM'S IS CARRIED OUT  
UNDER 1 ML OF DISTILLED WATER. A DETAILED STUDY WAS  
RELATED TO THE EFFECT OF SALT PARTICLES ON  
ATMOSPHERIC CORROSION. WHILE NO CURRENT FLOW AND NO  
CORROSION OCCURRED ON CLEAN SURFACES LARGE INCREASES  
OF THE GALVANIC CURRENT WERE OBSERVED WHEN SALT  
PARTICLES WERE PLACED ON THE ACM SURFACE PROVIDED  
THAT THE RELATIVE HUMIDITY IN THE TEST CELL WAS  
HIGHER THAN THE R.H. VALUE OF A SATURATED SOLUTION OF  
THE SALT PARTICLE APPLIED. THE ACM HAS ALSO BEEN  
USED TO MONITOR CHANGES IN THE COMPOSITION OF GASEOUS  
ATMOSPHERES (AIR, N2, N2 PLUS SO2).  
OUTDOOR EXPOSURE OF THE CU/ZN AND CU/STEEL  
ACM SUGGESTS THAT THIS INSTRUMENT CAN BE USED NOT  
ONLY TO MONITOR TIME-OF-WETNESS, BUT ALSO THE  
CORROSIVITY OF A TEST ENVIRONMENT.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A025 650 13/2

ENVIRONMENTAL HEALTH LAB MCCLELLAN AFB CALIF

HILL AFB BERYLLIUM AND CADMIUM EMISSION  
EVALUATION.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,

FEB 76 51P SWEIGART, MARLIN L. ;

REPT. NO. EHL-M-76M-4

PROJ: EHL-M-AAF-533

UNCLASSIFIED REPORT

DESCRIPTORS: \*BERYLLIUM, \*CADMIUM, \*AIR POLLUTION,  
TRANSPORT AIRCRAFT, SAMPLING,

CONCENTRATION (COMPOSITION), MILITARY FACILITIES,  
JET AIRCRAFT, CLEANING, PARTICLES

(U)

IDENTIFIERS: AIR POLLUTION SAMPLING, C-5A  
AIRCRAFT, C-5 AIRCRAFT, JET TRANSPORT PLANES,  
BRAKE SHOES, INDUSTRIAL WASTES

(U)

STACK EMISSIONS FROM A BERYLLIUM HONING BOOTH USED  
TO CLEAN C-5A BRAKESHOES WERE MEASURED.

BERYLLIUM EMISSIONS OF 0.55 G/DAY WERE FOUND.

THE CURRENT FEDERAL STANDARD FOR BERYLLIUM STACK  
EMISSIONS IS 10 G/DAY. EMISSIONS FROM A VACUUM  
CADMIUM METALIZING UNIT WERE ALSO MEASURED. TOTAL  
EMISSIONS FROM THE UNIT AVERAGED 2000 MICROGRAMS  
CADMIUM DUST PER PLATING CYCLE. AMBIENT AIR  
CONCENTRATIONS IN THE WORK AREA BELOW THE EXHAUST  
OUTLET AVERAGED 0.0001 MG/CU M. THE CURRENT  
THRESHOLD LIMIT VALUE (TLV) FOR CADMIUM DUST  
IS 0.05 MG/CU M.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A025 985

4/1

7/4

EDGEWOOD ARSENAL ABERDEEN PROVING GROUND MD

AEROSOL SPECTROSCOPY IN THE INFRARED,

(U)

76

15P

CARLON, HUGH R. ; ANDERSON,

DAVID H. ;

UNCLASSIFIED REPORT

DESCRIPTORS: \*ATMOSPHERE MODELS, \*INFRARED  
SPECTROSCOPY, \*AEROSOLS, OILS, PHOSPHORIC ACIDS,  
PHOSPHORUS, WATER, SMOKE, AIR POLLUTION,  
MATHEMATICAL ANALYSIS, DENSITY, SCATTERING,  
LIGHT TRANSMISSION

(U)

AEROSOL SPECTROSCOPY IS A NEW FIELD CONFRONTED WITH  
PLACING IN PROPER PERSPECTIVE A LARGE BODY OF  
EXISTING POPULAR 'FACT' WHICH HAS ITS BASIS PRIMARILY  
IS AEROSOL SCATTERING BEHAVIOR WHILE IT IGNORES  
AEROSOL ABSORPTION AND EMISSION CONTRIBUTIONS IN THE  
INFRARED. EFFECTS SUCH AS AEROSOL ABSORPTION AND  
PROBABLE LUMINESCENCE MUST BE UNDERSTOOD BEFORE  
ATMOSPHERIC MODELING, PARTICULARLY IN AND NEAR THE 8-  
13 MICROMETER ATMOSPHERIC 'WINDOW' THROUGH WHICH MOST  
OF THE EARTH'S RADIATIVE TRANSFER TAKES PLACE, CAN BE  
COMPLETED. MANY UNEXPLAINED ATMOSPHERIC PHENOMENA  
SHOULD BECOME UNDERSTANDABLE THROUGH PRECISE  
MODELING.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A026 546 21/4 21/5 13/2  
AIR FORCE AERO PROPULSION LAB WRIGHT-PATTERSON AFB  
OHIO

THE IMPACT OF JP-4/JP-8 CONVERSION ON  
AIRCRAFT ENGINE EXHAUST EMISSIONS.

(U)

DESCRIPTIVE NOTE: INTERIM TECHNICAL REPT. JUL 75-FEB  
76.

MAY 76 52P BLAZOWSKI, WILLIAM S. ;  
REPT. NO. AFAPL-TR-76-20  
PROJ: AF-3048  
TASK: 304805

UNCLASSIFIED REPORT

DESCRIPTORS: \*JET ENGINE FUELS, \*EXHAUST GASES,  
\*TURBOJET ENGINES, \*EMISSION, AIR POLLUTION,  
CONVERSION, COMBUSTORS, HYDROCARBONS, NITROGEN  
OXIDES, CARBON MONOXIDE, SMOKE, PARTICULATES,  
COMBUSTION

(U)

IDENTIFIERS: J-85 ENGINES, J-85-GE-5 ENGINES,  
JP-4 FUEL, JP-8 FUEL

(U)

THE PROPOSED CONVERSION OF PREDOMINANT AIR  
FORCE FUEL USAGE FROM JP-4 TO JP-8 HAS CREATED  
THE NEED TO EXAMINE THE DEPENDENCE OF ENGINE  
POLLUTANT EMISSION ON FUEL TYPE. AVAILABLE DATA  
CONCERNING THE EFFECT OF FUEL TYPE ON EMISSIONS HAS  
BEEN REVIEWED. T56 SINGLE COMBUSTOR TESTING HAS  
BEEN UNDERTAKEN TO DETERMINE JP-4/JP-8 EMISSION  
VARIATIONS OVER A WIDE RANGE OF SIMULATED ENGINE  
CYCLE OPERATING CONDITIONS AT IDLE. IN ADDITION,  
A J85-5 ENGINE WAS TESTED USING JP-4 AND JP-8.  
RESULTS OF THE PREVIOUS AND NEW DATA COLLECTIVELY  
LED TO THE FOLLOWING CONCLUSIONS REGARDING CONVERSION  
TO JP-8: (A) HC AND CO EMISSION CHANGES  
WILL DEPEND UPON INDIVIDUAL COMBUSTOR DESIGN  
FEATURES, (B) NO CHANGE TO NOX EMISSION WILL  
OCCUR, AND (C) AN INCREASE IN SMOKE/PARTICULATE  
EMISSIONS WILL RESULT. IT IS RECOMMENDED THAT  
THESE FINDINGS BE INCORPORATED INTO AIR QUALITY  
ANALYTICAL MODELS TO DEFINE THE OVERALL IMPACT OF THE  
PROPOSAL CONVERSION. FURTHER, IT IS RECOMMENDED  
THAT COMBUSTOR ANALYTICAL MODELS BE EMPLOYED TO  
ATTEMPT PREDICTION OF THE RESULTS DESCRIBED HEREIN.  
SHOULD THESE MODELS BE SUCCESSFUL, ANALYTICAL  
PREDICTION OF JP-8 EMISSIONS FROM OTHER AIR  
FORCE ENGINE MODELS MAY BE SUBSTITUTED FOR MORE  
COMBUSTOR RIG OR ENGINE TESTING. (AUTHOR)

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A026 837 6/6 13/2  
CALIFORNIA UNIV IRVINE

ENVIRONMENTAL QUALITY RESEARCH. THE  
PHYTOTOXICITY OF MISSILE EXHAUST PRODUCTS:  
SHORT TERM EXPOSURES OF PLANTS TO HCL, HF  
AND AL(2)O3.

(U)

DESCRIPTIVE NOTE: ANNUAL REPT. NO. 2, 16 JUN 74-31 MAY  
75,

MAY 76 53P LERMAN, SHIMSHON ;  
CONTRACT: F33615-73-C-4059  
PROJ: AF-6302  
TASK: 630204  
MONITOR: AMRL TR-75-102

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO REPORT DATED FEB 75, AD-  
A011 558.

DESCRIPTORS: \*HYDROGEN CHLORIDE, \*HYDROGEN FLUORIDE,  
\*ALUMINA, \*PLANTS(BOTANY), \*EXHAUST GASES,  
AIR POLLUTION, PARTICULATES, GASES, PLANT  
GROWTH, PLANT TISSUE, TOXICITY, EXPERIMENTAL  
DATA

(U)

IDENTIFIERS: ENVIRONMENTAL QUALITY, \*AIR POLLUTION  
EFFECTS(PLANTS), BIOINDICATORS, MISSILES

(U)

EIGHT SPECIES OF ORNAMENTALS AND THREE GARDEN  
PLANTS WERE SELECTED IN ORDER TO DETERMINE THE RANGE  
OF PHYTOTOXIC RESPONSES TO HYDROGEN CHLORIDE,  
HYDROGEN FLUORIDE AND ALUMINA PARTICLES. THE  
EXPERIMENTAL PLANTS WERE GROWN IN A GREENHOUSE OR  
GROWTH CHAMBERS OR GROWTH CHAMBERS UNDER CONTROLLED  
CONDITIONS. TWO EXPOSURE CHAMBERS WERE CONSTRUCTED  
TO ACCOMMODATE THE EXPOSURE OF PLANTS TO BOTH GASEOUS  
AND PARTICULATE POLLUTANTS. METHODS AND EQUIPMENT  
FOR THE GENERATION, DISPENSING AND MONITORING OF  
POLLUTANTS WERE ESTABLISHED. PLANTS OF VARIOUS AGE  
LEVELS FROM EACH SPECIES WERE EXPOSED TO THE MISSILE  
PRODUCTS AT VARIOUS CONCENTRATIONS FOR PERIODS OF 10  
OR 20 MINUTES EACH. PLANTS RECEIVED A SINGLE  
EXPOSURE FOR PHYTOTOXIC RANGE-FINDING STUDIES AS WELL  
AS MULTIPLE EXPOSURE TO DETERMINE CUMULATIVE EFFECTS  
OF TOXICANTS. GROWTH CONDITIONS SUCH AS  
TEMPERATURE, RELATIVE HUMIDITY AND LIGHT INTENSITY  
WHICH COULD AFFECT PLANT RESPONSES WERE ALSO UNDER  
INVESTIGATION. THE EXPOSED PLANTS WERE EVALUATED  
24 TO 48 HOURS AFTER EXPOSURE AND INJURY SYMPTOMS  
WERE RECORDED.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A030 005 14/2 21/5 7/4  
ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AIR FORCE  
STATION TENN

COMPARISON OF UV ABSORPTION MEASUREMENTS WITH  
PROBE-SAMPLING MEASUREMENTS OF NITRIC OXIDE  
CONCENTRATION IN A JET ENGINE COMBUSTOR  
EXHAUST.

(U)

DESCRIPTIVE NOTE: FINAL REPT. 1 APR-1 JUL 75,  
SEP 76 33P FEW, J. D. ; MCGREGOR, W.  
K. ; GLASSMAN, H. N. ;  
REPT. NO. AEDC-TR-76-134  
PROJ: ARO-R32P-A6A

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH ARO,  
INC., TULLAHOMA, TENN., REPT. NO. ARO-ETF-TR-  
76-77.

DESCRIPTORS: \*EXHAUST GASES, \*NITROGEN OXIDES,  
\*ULTRAVIOLET SPECTROSCOPY, \*ABSORPTION SPECTRA,  
\*JET ENGINES, AIR POLLUTION, RESONANCE ABSORPTION,  
BAND SPECTRA, COMBUSTORS, TURBOPROP ENGINES,  
CONCENTRATION(CHEMISTRY), EMISSION, PRESSURE,  
TEMPERATURE, GAS ANALYSIS, PROBES,  
COMPARISON

(U)

IDENTIFIERS: \*NITRIC OXIDE

(U)

MEASUREMENTS WERE MADE IN THE EXHAUST OF A T-56  
TURBINE ENGINE COMBUSTOR OF NITRIC OXIDE (NO)  
CONCENTRATION USING AN ULTRAVIOLET (UV) SPECTRAL  
ABSORPTION TECHNIQUE. THE MEASUREMENTS WERE MADE AT  
TWO AXIAL LOCATIONS IN THE COMBUSTOR EXHAUST STREAM.  
THE NO GAMMA-BAND RADIATION AT 2265 A PRODUCED  
IN A RESONANCE SOURCE WAS PASSED THROUGH THE EXHAUST  
STREAM, AND THE AMOUNT TRANSMITTED WAS RECORDED.  
THE MATHEMATICAL MODEL USED TO DETERMINE THE NO  
CONCENTRATION FROM THE ABSORPTION MEASUREMENTS IS  
DESCRIBED. PRESSURE AND TEMPERATURE BROADENING  
EFFECTS ON THE MEASURED ABSORPTION ARE CONSIDERED IN  
THE LINE-BY-LINE TRANSMISSION CALCULATION. THE  
LINE-OF-SIGHT ABSORPTION MEASUREMENTS THROUGH THE  
AXISYMMETRIC EXHAUST STREAM WERE CONVERTED TO LOCAL  
CONCENTRATION VALUES VIA AN ITERATIVE RADIAL  
INVERSION COMPUTATION. THESE IN SITU MEASUREMENTS  
ARE COMPARED TO NO CONCENTRATION VALUES OBTAINED BY  
CONVENTIONAL PROBE-SAMPLING TECHNIQUES USING A  
CHEMILUMINESCENT ANALYZER. THE IN SITU MEASUREMENTS  
OF THE NO CONCENTRATION WERE LARGER THAN THE PROBE-  
SAMPLED MEASUREMENTS BY FROM 50 TO 80 PERCENT,

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A030 615 13/2  
ENVIRONMENTAL HEALTH LAB MCCLELLAN AFB CALIF

EFFECT ON EMISSIONS OF PARTICULATES,  
HYDROCARBONS, NITROGEN OXIDES, LEAD, AND  
IRON FROM USING WASTE POL AS A SUPPLEMENT  
TO HEATING PLANT FUEL.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
JUN 75 24P JACKSON, JERRY W. ; GOKELMAN,  
JOHN J. ; NORMINGTON, WILLIAM E. ;  
REPT. NO. EHL-M-76M-12  
PROJ: EHL-M-AAF-339

UNCLASSIFIED REPORT

DESCRIPTORS: \*EMISSION, \*WASTE RECYCLING,  
\*PETROLEUM PRODUCTS, \*HEATING PLANTS, \*SMOKE  
STACKS, \*RECYCLED MATERIALS, AIR FORCE FACILITIES,  
FUEL OIL, LUBRICANTS, RATIOS, EMISSION CONTROL,  
PARTICULATES, HYDROCARBONS, NITROGEN OXIDES,  
LEAD(METAL), IRON, ENERGY MANAGEMENT,  
WASTES(INDUSTRIAL), AIR POLLUTION, POLLUTION  
ABATEMENT

(U)

STACK EMISSION TESTS WERE CONDUCTED AT THREE AIR  
FORCE HEATING PLANTS TO DETERMINE THE EFFECT ON  
STACK EMISSIONS RESULTING FROM THE USE OF AIR  
FORCE WASTE PETROLEUM FUELS AND LUBRICATING OILS  
(POL) AS A SUPPLEMENT TO HEATING PLANT FUEL.  
PARTICULATE EMISSIONS WERE UNAFFECTED BY (1)  
11% WASTE POL (BY VOLUME) WITH 89% NO. 5  
FUEL OIL AND (2) 4% WASTE POL WITH 96% NO.  
2 FUEL OIL. PARTICULATE EMISSIONS WERE INCREASED BY  
(1) 16% WASTE POL WITH 84% NO. 2 FUEL OIL  
AND (2) 16% WASTE POL WITH 84% (BY HEAT  
CONTENT) NATURAL GAS. HYDROCARBON AND NITROGEN  
OXIDE EMISSIONS WERE UNAFFECTED BY ANY PERCENTAGE OF  
WASTE POL UP TO 26% BY VOLUME. LEAD EMISSIONS  
WERE INCREASED BY ALL PERCENTAGES OF WASTE POL  
EXCEPT IN ONE TEST WHEN ONLY 2% WASTE WAS USED.  
EMISSION CODES WERE NOT VIOLATED BY THE USE OF  
WASTE POL IN ANY TESTS. (AUTHOR)

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DDC REPORT BIBLIOGRAPHY    SEARCH CONTROL NO.    00M07

AD-A031 692            13/2  
NEW ORLEANS UNIV LA DEPT OF CHEMISTRY

MEASUREMENT OF SULFUR DIOXIDE IN AUTOMOBILE  
EXHAUSTS AND INDUSTRIAL STACK GASES WITH A  
COATED PIEZOELECTRIC CRYSTAL DETECTOR.

(U)

JUL 75            8P            KARMARKAR, K. H. ; WEBBER, L.  
M. ; GUILBAULT, G. G. ;  
CONTRACT: DAHC04-75-G-0098  
MONITOR: ARO            11753.7-C

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN ANALYTICA CHIMICA ACTA  
V81 P265-271 1976.

DESCRIPTORS: \*AIR POLLUTION, \*SULFUR OXIDES,  
\*CRYSTAL DETECTORS, AUTOMOBILE EXHAUST, FLUE  
GASES, PIEZOELECTRIC CRYSTALS, MONITORS,  
MEASUREMENT, REPRINTS

(U)

A PORTABLE INSTRUMENT OPERATING ON A CAR BATTERY  
AND BASED ON A QUADROL-COATED PIEZOELECTRIC CRYSTAL  
DETECTOR HAS BEEN SUCCESSFULLY USED FOR MONITORING  
SULFUR DIOXIDE IN AUTO EXHAUSTS AND REFINERY STACK  
GASES. THE CONCENTRATIONS OF SULFUR DIOXIDE IN THE  
AUTO EXHAUSTS LIE IN THE RANGE 20-50 P.P.M. UP TO  
300 P.P.M. OF SULFUR DIOXIDE OCCURS IN THE REFINERY  
STACK GASES. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A032 555 4/1 4/2  
STATE UNIV OF NEW YORK AT ALBANY ATMOSPHERIC SCIENCES  
RESEARCH CENTER

PROJECT DUSTORM REPORT: OZONE  
MEASUREMENTS AND METEOROLOGICAL ANALYSES OF  
TROPOPAUSE FOLDING, (U)

MAY 76 38P DANIELSEN, EDWIN F. ; MOHNEN,  
VOLKER A. ;  
REPT. NO. ASRC-SUNY-PUB-394  
CONTRACT: N00014-76-C-0283

UNCLASSIFIED REPORT

DESCRIPTORS: \*ATMOSPHERIC CIRCULATION, \*OZONE,  
\*AIR MASS ANALYSIS, \*TROPOPAUSE, AIR POLLUTION,  
ENVIRONMENTS, ATMOSPHERIC CHEMISTRY, AIR TRAFFIC,  
WIND (U)  
IDENTIFIERS: TROPOPAUSE FOLDING, DUSTORM  
PROJECT (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A032 560 4/1 13/2  
RICE UNIV HOUSTON TEX

THE USE OF AIR ION MOBILITY SPECTRUM  
ANALYSIS TO DETERMINE AIR POLLUTION.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,  
SEP 75 45P ARNOLD, JON ALAN ;  
REPT. NO. TR071-757  
CONTRACT: N00014-75-C-0139, N00014-67-A-0145-0004

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: MASTER'S THESIS.

DESCRIPTORS: \*IONS, \*SPECTRUM ANALYZERS, \*AIR  
POLLUTION, ATMOSPHERIC ELECTRICITY, CONDUCTIVITY,  
PARTICULATES, AEROSOLS, MEASUREMENT, REGRESSION  
ANALYSIS, THESES, MOBILITY, SPECTRUM ANALYSIS  
IDENTIFIERS: WUNR211191

(U)

(U)

A COAXIAL-CONICAL, CONVERGING-CHANNEL, ION MOBILITY  
SPECTRUM ANALYZER HAS BEEN CONSTRUCTED AND A SERIES  
OF MEASUREMENT WERE MADE IN AN URBAN ENVIRONMENT.  
IN ORDER TO DETERMINE IF AIR ION MOBILITIES COULD  
BE USED TO DETERMINE CONCENTRATION OF AIR POLLUTIONS,  
A REGRESSION ANALYSIS WAS PERFORMED ON THE MOBILITY  
MEASUREMENTS AND SPECIFIC AIR POLLUTANT  
CONCENTRATIONS; SOME DEGREE OF CORRELATION WAS FOUND  
BUT RESULTS ARE INCONCLUSIVE AT THIS POINT.  
(AUTHOR)

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A032 630 13/2 4/1  
STATE UNIV OF NEW YORK AT ALBANY ATMOSPHERIC SCIENCES  
RESEARCH CENTER

OZONE MEASUREMENT AND METEOROLOGICAL ANALYSIS  
OF TROPOPAUSE FOLDING, (U)

76 16P MOHNEN, V. A. ; HOGAN, A.  
W. ; DANIELSEN, E. ; COFFEY, P. ;  
REPT. NO. ASRC-SUNY-PUB-415  
CONTRACT: N00014-76-C-0283, NSF-GA-22770

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PRESENTED AT THE INTERNATIONAL  
CONFERENCE ON PHOTOCHEMICAL OXIDANT POLLUTION AND  
ITS CONTROL, 12-17 SEP 76, RALEIGH, N. C.

DESCRIPTORS: \*AIR POLLUTION, \*TROPOPAUSE, \*OZONE,  
ATMOSPHERIC CHEMISTRY, HYDROCARBONS, PHOTOCHEMICAL  
REACTIONS, AIR MASS ANALYSIS, AIR QUALITY,  
POLLUTANTS, CLIMATE, WEATHER STATIONS,  
GLOBAL (U)  
IDENTIFIERS: TROPOPAUSE FOLDING (U)

OZONE MEASUREMENTS MADE AT SEVERAL SURFACE STATIONS  
IN NEW YORK AND MASSACHUSETTS SHOW TYPICAL  
CONTINENTAL DIURNAL VARIATION; A MOUNTAINTOP (850  
MB) STATION IN THE SAME REGION EXPERIENCES VERY  
LITTLE DIURNAL VARIATION. THE MOUNTAINTOP OZONE  
CONCENTRATION ALWAYS EXCEEDS THAT OF THE SURFACE  
STATIONS, AND THIS CONCENTRATION TREND IS PREDICTABLE  
BY METEOROLOGICAL ANALYSIS. THE RESULTS OF THESE  
EXPERIMENTS INDICATE THAT THE OZONE SOURCE LEVEL LIES  
ABOVE 850 MB. FLIGHT EXPERIMENTS HAVE VERIFIED  
THAT SIGNIFICANT DOWNWARD TRANSPORT OF OZONE FROM THE  
LOWER STRATOSPHERE ACCOMPANIES A TROPOSPHERIC FOLD,  
AND THAT THIS OZONE-ENRICHED AIR MAY REACH THE  
SURFACE AND/OR REMAIN IN THE MIDDLE TROPOSPHERE.  
(AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A033 505 6/6 4/1  
LOUISIANA STATE UNIV BATON ROUGE COASTAL STUDIES INST

ATMOSPHERIC DISPERSION CHARACTERISTICS IN  
COASTAL ENVIRONMENTS.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,  
DEC 76 18P HSU, S. A. ;  
REPT. NO. TR-224  
CONTRACT: N00014-69-A-0211-0003

UNCLASSIFIED REPORT

DESCRIPTORS: \*AIR POLLUTION, \*COASTAL REGIONS,  
\*ENVIRONMENTAL PROTECTION, ATMOSPHERES,  
ECOSYSTEMS, METEOROLOGICAL DATA, WIND,  
POLLUTANTS, OFFSHORE STRUCTURES, RADIATION  
HAZARDS, ATMOSPHERIC CIRCULATION, SITE SELECTION,  
ATMOSPHERIC SCATTERING

(U)

IDENTIFIERS: WETLANDS, WUNR388002

(U)

PROPOSED CONSTRUCTION OF OFFSHORE FACILITIES SUCH AS NUCLEAR-POWER PLANTS, AIRPORTS, AND OTHER STRUCTURES WHICH ARE POTENTIAL EMITTERS OF POLLUTANTS NECESSITATE CONSIDERATION OF ATMOSPHERIC DIFFUSION AND ANALYSIS OF THE FEASIBILITY OF SUCH STRUCTURES FROM THE METEOROLOGICAL POINT OF VIEW. THE POTENTIALLY HARMFUL NATURE OF THE RADIOACTIVE MATERIALS INVOLVED DICTATES THAT EVEN SMALL QUANTITIES BE TREATED WITH RESPECT. SPECIAL ATTENTION MUST BE GIVEN TO DESIGN CRITERIA IN LOCATIONS WHERE HURRICANES (TYPHOONS), STORM SURGES, TSUNAMIS, WATERSPOUTS, OR OTHER CATASTROPHIC METEOROLOGICAL AND OCEANOGRAPHIC PHENOMENA MAY OCCUR. THE MOVEMENT OF AIR POLLUTANTS IS GOVERNED PRIMARILY BY WIND SYSTEMS. IN COASTAL ZONES INFLUENCED BY LAND- AND SEA-BREEZE SYSTEMS, AT LEAST TWO INVERSION LAYERS EXIST: THE MESOSCALE SUBSIDENCE INVERSION AND INVERSION ASSOCIATED WITH THE INTERNAL BOUNDARY LAYER. THUS, FROM AN AIR-POLLUTION POINT OF VIEW, THERE IS NO ADVANTAGE TO LOCATING A POWER PLANT OR SIMILAR STRUCTURE OFFSHORE BECAUSE ON-SHORE AIRFLOW WILL BRING THE POLLUTANTS TO THE COAST. THERE ARE SOME AREAS ALONG CONTINENTAL AND ISLAND COASTS WHICH MAY BE SUITABLE FOR POWER PLANT OR AIRPORT LOCATION. MAJOR CRITERIA ARE THE FOLLOWING: (1) OFFSHORE WINDS SHOULD BE PREVALENT DURING MOST OF THE YEAR, PARTICULARLY DURING THE SUMMER; (2) THE UPWIND COASTAL REGION SHOULD BE RELATIVELY FLAT IN ORDER TO AVOID A MESOSCALE TURBULENT VORTEX;

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A034 726 13/2 21/5  
ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AIR FORCE  
STATION TENN

EVALUATION OF PROBE SAMPLING VERSUS OPTICAL  
IN SITU MEASUREMENTS OF NITRIC OXIDE  
CONCENTRATIONS IN A JET ENGINE COMBUSTOR  
EXHAUST.

(U)

DESCRIPTIVE NOTE: FINAL REPT. 2 JUL 74-16 FEB 75,  
JAN 77 45P FEW, J. D. ; PRYSON, R. J.  
; MCGREGOR, W. K. ;  
REPT. NO. AEDC-TR-76-180  
PROJ: ARO-R32-P55A

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH ARO,  
INC., TULLAHOMA, TENN. REPT. NO. ARO-ETF-TR-  
76-76.

DESCRIPTORS: \*NITROGEN OXIDES, \*EXHAUST GASES,  
\*PROBES, OPTICAL EQUIPMENT, SAMPLERS,  
CONCENTRATION (COMPOSITION), COMPARISON, JET  
ENGINES, AIR POLLUTION, CHEMILUMINESCENCE,  
ABSORPTION SPECTRA, PERFORMANCE TESTS, BAND  
SPECTRA, GAS ANALYSIS

(U)

IDENTIFIERS: \*AIR POLLUTION DETECTION, DESIGN  
CRITERIA

(U)

MEASUREMENTS OF NITRIC OXIDE (NO) CONCENTRATIONS  
WERE MADE AT THE EXHAUST OF A JET ENGINE COMBUSTOR BY  
CONVENTIONAL GAS-SAMPLING PROBE AND CHEMILUMINESCENT  
ANALYZER METHODS, BY OPTICAL RESONANCE ABSORPTION  
THROUGH ABSORPTION CELLS LOCATED WITHIN THE GAS  
SAMPLE TRANSFER LINE, AND BY OPTICAL RESONANCE  
ABSORPTION DIRECTLY THROUGH THE COMBUSTOR EXHAUST.  
THE COMBUSTOR WAS EXHAUSTED TO ATMOSPHERIC PRESSURE  
AND WAS OPERATED AT AN INLET TEMPERATURE NEAR 600F,  
A TOTAL PRESSURE OF ABOUT 3 TO 4 ATM, AND AT FUEL-TO-  
AIR RATIOS (F/A) FROM 0.01 TO 0.05. A TUBULAR  
INLET, LIQUID-COOLED, STAINLESS STEEL SAMPLING PROBE  
WAS INSERTED INTO THE GAS STREAM AT THE COMBUSTOR  
EXIT. THE OPTICAL TECHNIQUE USED WAS THE RESONANCE  
ABSORPTION METHOD FOR THE (0,0) GAMMA-BAND OF  
NO AT WAVELENGTHS RANGING FROM 2,200 TO 2,270 A.  
THE RESULTS SHOWED THAT WITHIN THE SAMPLING LINE  
BOTH THE CHEMILUMINESCENT GAS ANALYZER AND THE  
OPTICAL ABSORPTION METHOD GAVE NO CONCENTRATIONS  
THAT AGREED WITHIN ABOUT 20 PERCENT.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A036 088 4/1  
DURHAM UNIV (ENGLAND) DEPT OF PHYSICS

PHYSICAL CHARACTERISTICS OF THE NATURAL  
ATMOSPHERIC AEROSOL.

(U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT. MAR 75-SEP 76,  
OCT 76 108P JENNINGS, S. GERARD ;  
CONTRACT: DAJA37-75-C-1913  
PROJ: 1T161102B53B  
TASK: 00

UNCLASSIFIED REPORT

DESCRIPTORS: \*AEROSOLS, \*ATMOSPHERES, PHYSICAL  
PROPERTIES, PARTICLE SIZE, DISTRIBUTION,  
CONCENTRATION (COMPOSITION), DIURNAL VARIATIONS,  
AIR QUALITY, HUMIDITY, CRYSTAL GROWTH, SODIUM  
CHLORIDE, HYGROSCOPICITY, OPTICAL EQUIPMENT,  
PARTICLE COUNTERS, AUTOMATIC, MIE SCATTERING,  
GREAT BRITAIN

(U)

IDENTIFIERS: AMMONIUM SULPHATE, WU505, AS53B,  
PE61102A

(U)

IN THIS REPORT AN ANALYSIS IS MADE OF CONTINUOUS  
MEASUREMENTS OF THE NUMBER AND SIZE DISTRIBUTION OF  
SUBMICROMETRE AND LARGE AEROSOL PARTICLES UP TO 5  
MICROMETRES IN RADIUS. AN AUTOMATED OPTICAL  
PARTICLE COUNTER WAS USED TO TAKE MEASUREMENTS AT A  
10 MINUTE SAMPLING FREQUENCY OVER A 49 DAY PERIOD AT  
DURHAM OBSERVATORY, NEAR DURHAM CITY, NORTH  
EAST OF ENGLAND. ADDITIONAL MEASUREMENTS WERE  
MADE AT A REMOTE MOUNTAIN STATION AT GREAT DUN  
FELL, 842 M MSL AND AT AN ISOLATED MARITIME SITE.  
THE AVERAGED DIURNAL VARIATION SHOWS A MAXIMUM IN  
PARTICLE NUMBER CONCENTRATION FROM ABOUT 0200-0800  
LOCAL TIME AND A DISTINCTIVE MINIMUM OVER THE PERIOD  
1400-2000 HOURS. THE PARTICLE NUMBER CONCENTRATION  
FOLLOWS A LONG-NORMAL DISTRIBUTION. AN ANALYSIS OF  
THE SAMPLING FREQUENCY SHOWS THAT THE MEASUREMENTS  
COULD BE MADE LESS FREQUENTLY BY FACTORS UP TO 20,  
WITHOUT LOSS OF SIGNIFICANT INFORMATION.

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A036 393 21/5 13/2  
AIR FORCE CIVIL ENGINEERING CENTER TYNDALL AFB FLA

THE EFFECT OF NAVY AND AIR FORCE AIRCRAFT  
ENGINE TEST FACILITIES ON AMBIENT AIR  
QUALITY.

(U)

DESCRIPTIVE NOTE: FINAL REPT. 1 JUN 75-31 JUL 76,  
OCT 76 24P GREMS, BRADFORD C. , III;  
NAUGLE, DENNIS F. ;  
REPT. NO. AFCEC-TR-76-36

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SUPERSEDES REPT. NO. AFCEC-TM-  
76-7.

DESCRIPTORS: \*JET ENGINES, \*TEST FACILITIES, \*AIR  
QUALITY, AIR POLLUTION, POLLUTION ABATEMENT,  
NITROGEN OXIDES, HYDROCARBONS, CARBON MONOXIDE,  
PARTICULATES, COMPUTERIZED SIMULATION,  
MATHEMATICAL PREDICTION, ENVIRONMENTAL IMPACT  
STATEMENTS

(U)

IDENTIFIERS: SULFUR DIOXIDE

(U)

AN INVESTIGATION OF THE AIR QUALITY IMPACT OF  
DOD TURBINE ENGINE TEST FACILITIES WAS PERFORMED.  
EMISSIONS AND POLLUTANT DISPERSION FROM TEST CELLS  
AND AIRCRAFT AT SIX DOD INSTALLATIONS WERE  
PREDICTED USING A SOPHISTICATED COMPUTER MODEL.  
PREDICTED POLLUTANT CONCENTRATIONS ARE COMPARED TO  
AMBIENT AIR QUALITY STANDARDS AND MEASURED AMBIENT  
VALUES FOR HYDROCARBONS, OXIDES OF NITROGEN, AND  
PARTICULATES. JET ENGINE TEST CELLS HAVE NO  
SIGNIFICANT IMPACT ON AIR QUALITY FOR ANY POLLUTANT  
AT ANY LOCATION STUDIED. TEST CELL POLLUTANT  
CONCENTRATIONS ARE CONSIDERABLE LESS THAN THE LEVELS  
GENERATED BY AIRCRAFT OPERATIONS AND WELL BELOW  
MEASURED AMBIENT AIR QUALITY LEVELS IN THE AREAS  
STUDIED. AMBIENT CARBON MONOXIDE AND SULFUR DIOXIDE  
LEVELS RESULTING FROM TEST CELL EMISSIONS ARE  
INSIGNIFICANT. CONTROL OF ANY POLLUTANTS GENERATED  
BY TEST CELLS WOULD NOT MEASURABLY IMPROVE AMBIENT  
AIR QUALITY. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A036 504 13/2 4/1  
WYOMING UNIV LARAMIE DEPT OF PHYSICS AND ASTRONOMY

ASSESSMENT OF ATMOSPHERIC CONDENSATION NUCLEI  
ASSOCIATED WITH JET AIRCRAFT TRAFFIC. (U)

DESCRIPTIVE NOTE: ANNUAL REPT. MAY 76-APR 77,  
APR 77 12P HOFMANN, D. J. ; ROSEN, J.  
M. ;

REPT. NO. CN-7  
CONTRACT: N00014-76-C-0170  
PROJ: NR-211-151

UNCLASSIFIED REPORT

DESCRIPTORS: \*AEROSOLS, \*AIR POLLUTION,  
\*CONDENSATION NUCLEI, \*JET ENGINE EXHAUST,  
PARTICLE SIZE, STRATOSPHERE, TROPOSPHERE,  
SULFURIC ACID, SULFATES, EXHAUST GASES, BALLOON  
EQUIPMENT, MONITORING, REMOTE DETECTORS,  
MEASUREMENT, ATMOSPHERIC MOTION (U)  
IDENTIFIERS: PARTICULATES, AIR POLLUTION  
DETECTION (U)

MEASUREMENT OF CONDENSATION NUCLEI (CN) IN THE  
SIZE RANGE  $R \geq 0.01$  MICROMETERS BY BALLOON-  
BORNE DETECTORS FROM A NUMBER OF STATIONS SUGGESTS  
THE FOLLOWING: (A) CN PROFILES  
(CONCENTRATION VS ALTITUDE) TO 30KM ARE SOMEWHAT  
UNIFORM GLOBALLY WITH TYPICALLY HIGH (APPROXIMATELY  
1000/CC) CONCENTRATIONS IN THE TROPOSPHERE AND  
TYPICALLY LOW (APPROXIMATELY 10/CC)  
CONCENTRATIONS IN THE STRATOSPHERE. (B) THE  
TROPOSPHERE APPEARS TO SERVE AS A CN SOURCE FOR THE  
STRATOSPHERE. (C) CN OCCURRING IN TROPOSPHERIC  
LAYERS ARE PARTIALLY VOLATILE AT 150C. (D) A  
CN LAYER OBSERVED IN THE STRATOSPHERE AT 22KM WAS  
APPARENTLY DUE TO THE JET ENGINE EMISSIONS OF A HIGH  
FLYING AIRCRAFT. IN ADDITION, LARGER PARTICLES ( $R \geq 0.15$  MICROMETERS) IN THE STRATOSPHERIC  
SULFATE LAYER HAVE CONTINUED TO DECAY UNIFORMLY  
FOLLOWING AN INJECTION APPARENTLY DUE TO A VOLCANIC  
ERUPTION IN OCTOBER 1974. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00M07

AD-A037 048 13/2  
CONSTRUCTION ENGINEERING RESEARCH LAB (ARMY) CHAMPAIGN  
ILL

FUGITIVE DUST EMISSIONS FROM CONSTRUCTION  
HAUL ROADS.

(U)

DESCRIPTIVE NOTE: SPECIAL REPT.,

FEB 77 53P STRUSS, S. R. ; MIKUCKI, W.

J. ;

REPT. NO. CERL-SR-N-17

PROJ: 4A162121A896

TASK: T2

UNCLASSIFIED REPORT

DESCRIPTORS: \*AIR POLLUTION, \*DUST, SOILS,  
ROADS, TRUCKS, CONSTRUCTION, MOISTURE CONTENT,  
PLASTIC PROPERTIES, EMISSION, TIRES, WATER  
TREATMENT, CONTROL, LABORATORY TESTS,  
ENVIRONMENTAL IMPACT STATEMENTS

(U)

IDENTIFIERS: AIR POLLUTION ABATEMENT, WU006,  
AS896, PE62121A

(U)

IN FISCAL YEAR 1972, A STUDY WAS INITIATED  
(1) TO EXAMINE THE NATURE OF ENVIRONMENTAL  
DEGRADATION RESULTING FROM CONSTRUCTION, AND (2)  
TO FORMULATE BOTH A CONTRACT SPECIFICATION  
WRITER'S GUIDE CONTAINING ENVIRONMENTALLY  
PROTECTIVE SPECIFICATIONS AND A RESIDENT  
ENGINEERS' GUIDE WITH SIMILAR INFORMATION TO  
ALLOW PROPER ENFORCEMENT OF THE ENVIRONMENTAL  
SPECIFICATIONS. THESE TWO GUIDES WERE PUBLISHED AS  
CERL TECHNICAL REPORTS E-72 (JULY 1975) AND  
E-57 (MAY 1975), RESPECTIVELY. DURING THE  
DEVELOPMENT OF THESE DOCUMENTS, TWO AREAS WERE NOTED  
TO HAVE A PAUCITY OF AVAILABLE INFORMATION:  
(1) SOLID WASTE GENERATION FROM CONSTRUCTION AND  
DEMOLITION ACTIVITIES, AND (2) FUGITIVE DUST  
EMISSIONS FROM UNIMPROVED CONSTRUCTION HAUL ROADS.  
THIS REPORT PROVIDES DETAILS ON A STUDY WHICH  
DEVELOPED A MODEL FOR PREDICTING DUST EMISSIONS FROM  
HAUL ROADS. THE STUDY EXAMINES THE USE OF WATER AS  
A PALLIATIVE TO CONTROL DUST EMISSIONS. THE STUDY  
WAS CONDUCTED IN TWO PHASES, AND COMPARATIVE DATA  
WERE OBTAINED FROM A THIRD, INDEPENDENTLY CONDUCTED  
PHASE. THIS STUDY INDICATES THAT SOIL WATER  
POTENTIAL, ALONG WITH VEHICLE SPEED, VEHICLE WEIGHT,  
AND SOIL TYPE, ARE SIGNIFICANT IN THE DETERMINATION  
OF DUST EMISSION RATES.

(U)

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AD-A037 361 6/1 6/3 4/1  
STATE UNIV OF NEW YORK AT ALBANY ATMOSPHERIC SCIENCES  
RESEARCH CENTER

MEASUREMENTS OF BACKGROUND HYDROCARBONS IN  
REMOTE AREAS,

(U)

NOV 76 21P WHITBY, ROBERT ; ROLAND, LUTHER  
; MOHNEN, VOLKER ; COFFEY, PETER ;  
CONTRACT: N00014-76-C-0283

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH NEW  
YORK STATE DEPT. OF ENVIRONMENTAL CONSERVATION,  
ALBANY. PRESENTED AT THE SYMPOSIUM ON THE NON-  
URBAN TROPOSPHERIC COMPOSITION, HOLLYWOOD, FLA.,  
10-12 NOV 76.

DESCRIPTORS: \*HYDROCARBONS, \*AIR POLLUTION,  
BACKGROUND, REMOTE AREAS, MEASUREMENT, FORESTS,  
TERPENES, OZONE, CONDENSATION NUCLEI, TREES,  
SYMPOSIA

(U)

IDENTIFIERS: CONIFERS

(U)

VOLATILE TERPENE, OZONE, AND CONDENSATION NUCLEI  
CONCENTRATIONS HAVE BEEN MEASURED AT A REMOTE SITE IN  
THE ADIRONDACK MOUNTAINS OF NEW YORK STATE.  
MEASUREMENTS WERE TAKEN IN A CONIFER FOREST,  
DOWNWIND OF A CONIFER FOREST, AND ON A MOUNTAIN  
SUMMIT ABOVE THE TREE LINE. A WIDE VARIETY OF  
ORGANIC SPECIES WERE FOUND. SOME OBSERVATIONS AND  
SPECULATIONS ABOUT THE RELATIONSHIPS AMONG THE  
ORGANIC SPECIES, CONDENSATION NUCLEI, AND OZONE ARE  
MADE.

(U)



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CORPORATE AUTHOR - MONITORING AGENCY

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HANSCOM FIELD MASS

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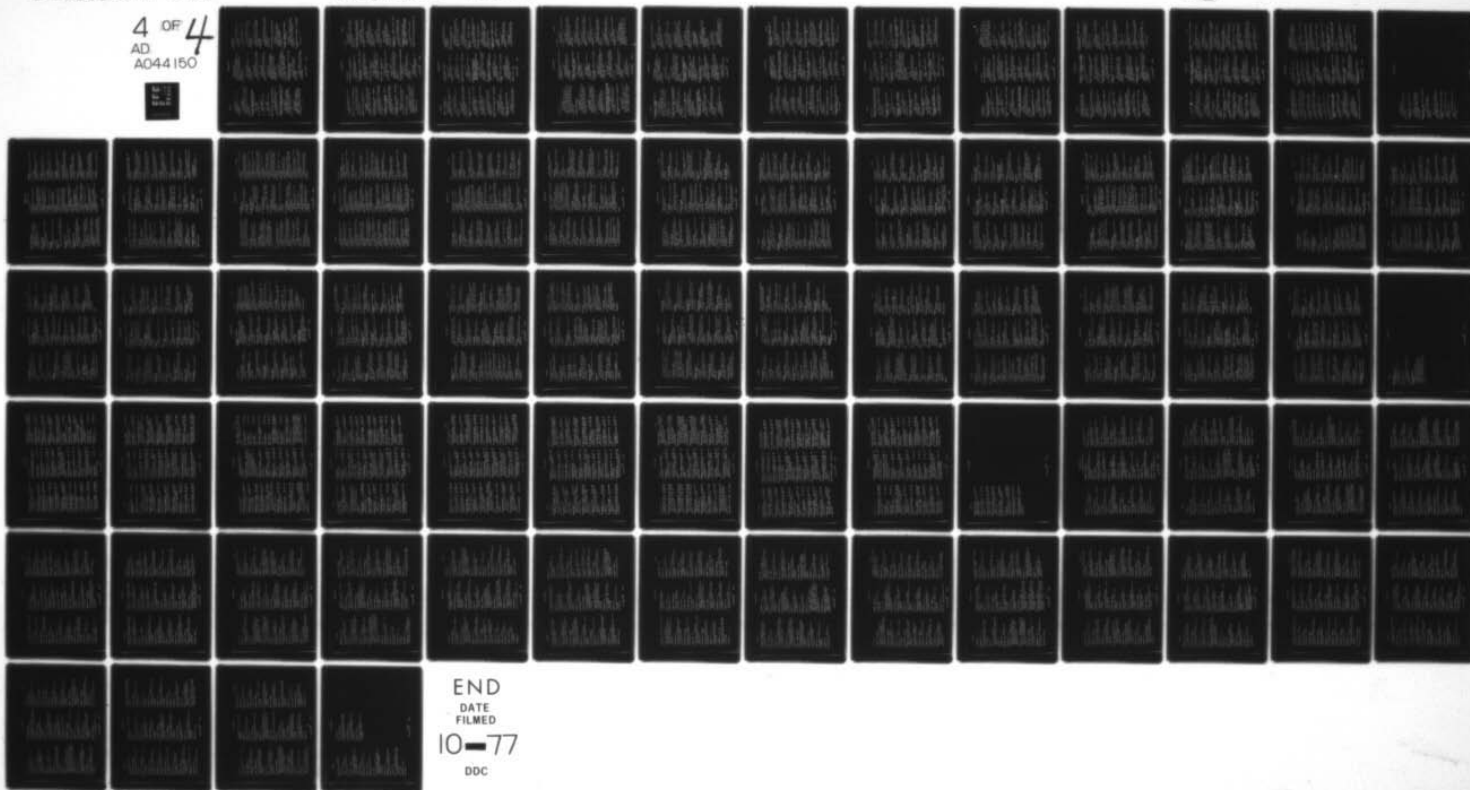
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